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AUSTRALIA'S #1 PC GAMING MAG

PC PowerPlay



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ALREADY HAS A KING

DDR4 RAM

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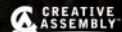
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YOUR GAME WORLD LIGHTS UP



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>PCPP
#251



ON THE COVER

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16 quintillion planets await



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The new king of VR



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Art versus Science

Putting together a magazine is as much an art as it is a science. You have to balance broad appeal with niche interest, work the flow to keep people reading from one section to the next, making sure that heavy articles and features and interspersed with lighter fare. You have to think about what the readers will like and balance that against what information and products are currently available and make sure that the content is suitable for the faithful as well as new readers. You have to find a cover that pops on the stand and makes people want to pick up the issue and make sure that the content backs it up.

Some months this can be a real challenge, especially during those times of the year when developers for both technology and games go silent in preparation for their big events like Computex or E3, when finding that resonant content is based more around long form content. Other times it's almost too easy. No Man's Sky is an obvious choice for us in terms of a cover feature. It's right up our alley, and from the feedback and questions we've received, right up yours as well. Some month's content and flow is determined by the market.

Next issue is going to be review heavy, that's for sure, with Battleborn, Overwatch, Doom, Homefront: The Revolution, Total War: Warhammer, Eisenhorn: Xenos, Stellaris, Killer Instinct Season 3 and a bunch more all coming out within the space of a few weeks. On top of that, now that we have access to both VR headsets, it's time to start reviewing those as well.

After you've thought of all those factors, determined your content, commissioned your writers, and interviewed your subjects, when all the words are done and Malks has worked his magic we send out baby off into the ether to be printed. It can be a fraught time, with dates slipping on products, articles not coming through, delays and the like, but once you get your baby back from the printers, and pick up that first copy out of the box it's all worth it. Seeing each issue in print energises you for the next one. I love this job.

Daniel Wilks

Editor

@drwilkenstein

QUOTES OF THE MONTH

Emily, age 5.
"Playing games?
That's not a job!"

"What's the
difference between
a semi and a full?"

"I love
trying weird
meats"

PC PowerPlay

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Inbox



LETTER OF THE MONTH WINS!

Write in to PCPP with your rants, considered opinions, and endless run-on sentences of pure awesome. The address is letters@pcpowerplay.com.au. Each letter read by hand! This month our Letter of the Month winner scores himself a super sweet Steelseries Apex M500 keyboard courtesy of the fine people at Steelseries.



LETTER OF THE MONTH MY TURN

Hey guys,

I really feel like we've been spoiled with turn based strategy games in the recent years. My favourite of these being the XCOM games as well as Divinity: Original Sin. With XCOM Enemy Unknown receiving a huge expansion (Enemy Within) and Divinity: Original Sin giving out a free enhanced version for those who bought it originally. The huge support shown at the Divinity: Original Sin 2 and Darkest Dungeon Kickstarter just goes to show that the turn based strategy genre has and will always have popularity.

Previously I had kept myself to action combat games, but these additions to the turn based

strategy genre really gave me an appreciation for the more methodical and calculated approach these games require. So when XCOM 2 recently launched I even went to the extent of ditching the laptop and finally acquiring myself a gaming PC. I really feel like this game got a lot more hate than it deserves. Recent patches

have all but eliminated the bugs and optimisation problems seen at launch and the modding community has made some truly amazing additions to the game. I would definitely recommend giving it a try.

Josh Kwan

Hi Josh – we really couldn't agree more about the number of great turn based games in recent years. You can add Shadowrun Returns, Shadowrun Hong Kong, Banner Saga and its sequel, Armello and a stack of others to your list if you haven't already sampled them. As far as Xcom 2 goes, it could be a much better game now with user generated content and glitches patched out, but as always, launching in a very glitch state doesn't really inspire trust for players to come back and try again.

PLAYER 2

Hi guys,

I was wondering if you would be able to include more information about the control options and local multiplayer support in your game reviews?

I run a primary gaming PC but also have a combined http/server/multiplayer machine

**FEEDBACK #250**

► **Michael Barrs:** Loved the Total Warhammer coverage. Can't wait to get my hands on it- it's the fantasy game I've been waiting for since Shadow of the Horned Rat was released. Also really looking forward to HBS' new Battletech game.

A WINNER IS YOU
Congratulations to Lachlan Vaelioja for winning our issue #249 Dark Souls III main subscriptions prize!



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connected to a projector and knowing whether a game will support 2-4 xbox controllers as well as local multiplayer makes a huge difference when I'm deciding if a game is worth purchasing. Some titles which I would have no interest in playing traditionally become incredibly fun when playing with 3 other people with wildly differing levels of ability (looking at you Sonic & All-Stars Racing Transformed). I'm sure that I'm not the only reader with a similar setup, especially with Steam's streaming abilities. I think that these additional details would add immense value to the ultimate reason many people read this magazine.

Luke

P.S. This info could go in the box where the developer/publisher currently is to make it easy to see before reading the review.

Hi Luke – we'll definitely take a look into it. We're running a reader's survey very soon, and everyone who completes it will have their chance to make suggestions as well as give us a good idea of how and when they game, what type of games they prefer and how important multiplayer is to them.



DAVE, 35, QLD

This month's MY PC brought to you by



MOST IMPRESSIVE FEATURES:

1. The monitor!
2. USB Saturn Controller!
3. Concealed PS3 and PS4 behind the monitor!
4. Over-clocked i7 920 still going strong after 7 years!
5. Spiderman!
6. The monitor!
7. I don't know!
8. The new video cards I don't actually have yet and may not get for 18 months!
9. Custom Coffee-Mug!
10. Baby Monitor!

LAST UPGRADE: Christmas 2015: Sony Bravia KD49X8300C, 512GB Samsung Evo SSD, 16GB Corsair Vengeance DDR3 and Logitech G933 Wireless Headphones.

DREAM UPGRADE: A new Skylake PC with dual-Pascal 980Ti equivalents. Realistic dream upgrade is one or two

Pascal 980Ti equivalents, when they come out. But really, all I want is to be able to have a 60Hz 4k Desktop and to be able to play Dark Souls 1 at 4k. Nothing else really matters at the moment.

FAVOURITE FEATURE: Well, it's the screen at the moment. But what is more important is that everything on the desk in my little corner has a purpose and forms a critical part of a delicate gaming-ecosystem, whether it be PC, console or emulation. So everything together is my favourite feature.

1. If you sit that close to the TV your eyes will go square!
2. Needs a matching USB coffee warmer
3. Who doesn't love a Corsair keyboard?
4. Consoles not hidden well enough
5. Biggest phone ever?
6. Older CPUs still have a lot of life in them

DAVE WINS!

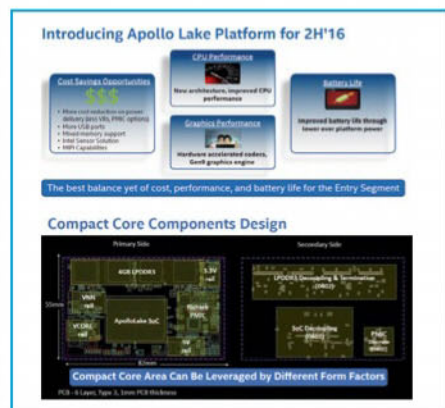
Thanks to the good people at Roccat, Dave scores himself a hugely customisable, not to mention accurate Nyth. Enjoy!



WANT FREE STUFF? Send your MyPC entry today to mypc@pcpowerplay.com.au. Include the four most impressive elements of its hardware, your last upgrade, your dream upgrade, your favourite feature and what you think makes your PC special. Make sure to include your name, age and location. And last but not least, attach a 5MP or bigger image of your PC! No camera phone shots, and make sure it's in focus!

INTEL UNVEILS ITS LATEST ENTRY LEVEL SOC, APOLLO LAKE

Intel took the wraps off their affordability focussed Apollo Lake SoC at the IDF16 event in Shenzhen this month. So all those cheap 11.6" screen laptops you've seen around the place with low end Pentium N3050 and Atom Z3735 CPUs? They're about to get a bit more grunt for a bit less cash. Apollo Lake brings improved graphics performance, better CPU performance, increased battery life due to overall platform power improvements and importantly for this product range, a lower bill of materials thanks to the integration of stuff that otherwise would need dedicated ICs (no USB hubs, no SD card reader chips, built in signal processors, etc.). Expect to see laptops using this platform mid-year at Computex and in shops not long after that.



LIAN-LI GIVES YOU THE COMPUTER CASE DESK YOU'VE ALWAYS WANTED

Lian-Li have released some funky PC cases in their time and the tradition continues with the Lian-Li DK-04. The DK-04 is an aluminium desk with a glass top that you can shove PC parts in to. The table top is 1200mm x 750mm in size and can handle up to 100kg of weight on top of it. Inside, the DK-04 can be filled up with 10 disk drives, eight 120mm fans and accommodates full size ATX motherboards and 320mm long video cards. If you're into water cooling, hoses and radiators will fit comfortably in the DK-04's insides. It's fully height adjustable via an electric motor, so at the touch of a button the desk can be raised to 1160mm or lowered to 675mm to ensure you're ergonomically taken care of. There's even a small cut out at the rear to support a monitor arm. The DK-04 isn't cheap, with a listed price of US\$1500.

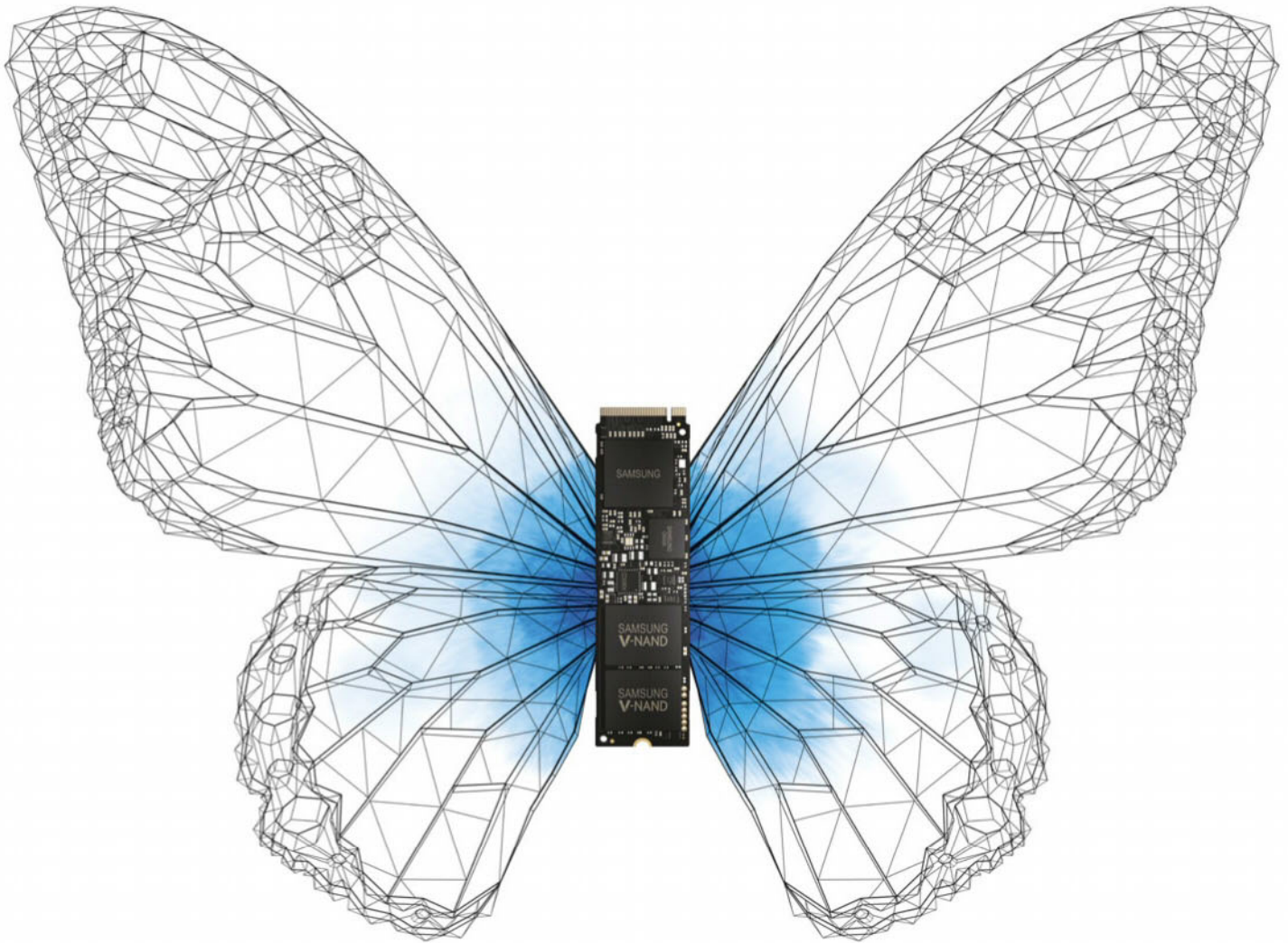


ACER'S PREDATOR 17X GAMING LAPTOP IS A HEFTY PORTABLE POWERHOUSE

Acer showed us their latest gaming laptop, the Predator 17X, which Acer reckon is designed from the ground up to support VR headsets such as the Oculus Rift and HTC Vive. It packs an i7-6820HK CPU, Nvidia GeForce GTX 980 graphics and a custom cooling system to keep both those high end chips from melting. The 17.3" screen comes in FHD or UHD options and both are IPS panels with G-SYNC support. On the storage front, it'll take the latest NVMe PCIe SSDs and memory wise, will support up to 32GB of DDR4 RAM. Impress your friends with the RGB backlit keyboard and frag them with the low-latency Killer DoubleShot Pro network interface. All that performance weighs a hefty 4.5kg, twice the weight of your traditional 17" laptop. The Predator 17X will sell for US\$2,799 and be on sale around June.

No Australian price or date unfortunately.

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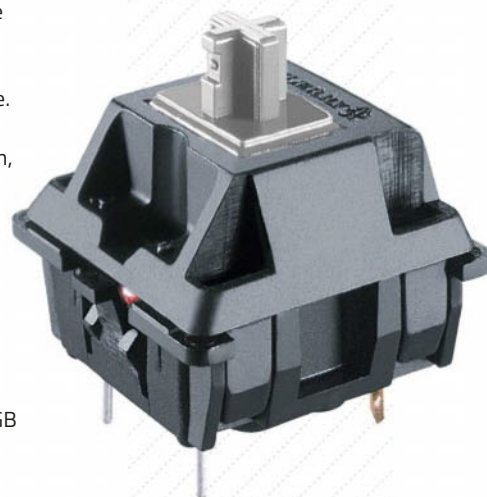
SEAGATE STARTS SHIPPING 10TB HELIUM FILLED HARD DRIVES

10 TB hard drives filled with helium are now leaving Seagate's factory and entering the hands of some people with heaps of data to store. Utilising the 3.5" form factor we all know and love, Seagate fills the enclosure with helium gas in order to ensure the seven disk platters and fourteen heads work smoothly. Helium's chemical properties literally improve the ability of the platters and heads to move freely, reducing the amount of vibration that could trip up the reading and writing of data from the extremely densely packed platters. The top of the line ST10000NM0016 has a MBTF of 2.5 million hours and will achieve speeds of around 250MB/sec for sequential data reads. It sells for US\$695, putting it at the higher end of the dollar per gigabyte rankings and an item for those who absolutely need the densest data they can get.



CHERRY RELEASES NEW LOW LATENCY MX SPEED KEYBOARD SWITCHES

Mechanical keyboards are all the rage lately, proving popular with gamers who need every millisecond of latency removed to gain a competitive advantage. Cherry have jumped on this opportunity and have released a new keyboard switch, dubbed MX Speed. These new switches allow a keypress to be registered at the shallow depth of 1.2mm, which is 40% quicker than Cherry's previously fastest keyboard switch. Cherry has retained the same activation force though, so you don't need to tap the key any differently to achieve the fastest response time. Of course, this new switch also supports RGB backlighting, a must have for any serious gaming rig. Corsair are first to use the new Cherry keys, on their K70 and K65 keyboards, which sell for US\$170 and US\$150 respectively.



AMD RELEASE A 32GB VERSION OF THE FIREPRO W9100 PROFESSIONAL GRAPHICS CARD

AMD has announced a 32GB version of the FirePro W9100 graphics card, making AMD the first to ship such a card. Designed to take on Nvidia's 24GB Quadro M6000, AMD say this beefed up version of the Firepro W9100 is ideal for those doing large 3D renders and high performance computing, where the more video RAM can be made available, the better. Nothing else on the Firepro W9100 has changed. It's still the same 28nm, 930MHz core, Hawaii based single GPU with 2,816 stream processors. This new card now makes pro users choose between the faster GPU on the Nvidia Quadro M6000, or the extra 8GB of RAM on the FirePro W9100. All that RAM comes at a retail price of US\$4999 - definitely a professional price for a professional graphics card.

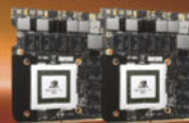


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NO. 1 IN GAMING

WARHOLD LOOKS LIKE A FASCINATING MASH-UP OF MMO AND STRATEGY

Rule a kingdom, recruit heroes, and basically be your own base – sounds nice!

Indie studio InQuake Softworks revealed its new MMO/strategy game Warhold yesterday, and it looks mighty intriguing.

Warhold is set in... well, Warhold, which seems a grim name for a place if you ask us, but it also seems kind of appropriate. In the game you'll play the Sovereign of your own city state, and as such you can learn spells, recruit and control heroes, decide the rules of your kingdom, and generally be the boss.

There's also a complete political system for managing contact and trade with your neighbours, and when it all inevitably goes to shit, the game also features a hands-on battle system, as well as arena combat.



"We are extremely excited to unveil Warhold and its many in-game features and captivating ideas the team has worked on to make it a game fans of this genre will gravitate towards," said Denis Kryukov, InQuake Softworks Founder and CE, said in yesterday's release.

There's no release date yet, but we're certainly keen to keep an eye on this one.

SOL CONTINGENCY TEAM RELEASES FREE MULTIPLAYER DEMO, PROVING GROUNDS

It's not quite Descent, but it's as close as we're going to get to the classic 6DoF shooter.

To say I was, back in the day, addicted to Descent, is bit of an understatement. I and my friends played it endlessly, smashing AI bots in the game's campaign and smashing each other in one of the most challenging multiplayer environments ever devised.

Descent is, now, long gone, but a team of indie devs have just released a demo for a standalone game called Sol Contingency, which we've written about a couple of times previously. The full game will include single and multiplayer modes, but for now, the team wants to show off the hectic competitive play.

The game's been made in Unreal Engine 3, but the full



version will be made using Unreal Engine 4.

The game takes place in zero gravity environments, where players can enjoy six degrees of freedom, and flight mechanics based upon thrust-based motion physics and the ability to travel in any direction you want.

So check out the demo at solcontingency.com, and keep an eye out for the final release.

WORLD OF WARCRAFT TO GET NEW LEGION EXPANSION IN AUGUST

Complete with level cap boost, new Demonhunter class, and a whole mess of new content.

You can't keep a good badguy down. World of Warcraft's classic villains the Burning Legion are back in the next expansion. The game's sixth expansion, The Legion – creative naming there, Blizzard – will be drop on August 30th.

"Legion opens a dark and thrilling new chapter in one of the Warcraft series' greatest conflicts, and things will never be the same for some of Azeroth's most iconic heroes and villains," said Mike Morhaime, CEO and cofounder of Blizzard Entertainment, said in today's announcement. "This expansion is loaded with features and content that give players whole new ways to explore the world and customise their heroes. We're looking forward to sending everyone into battle against the Burning Legion this August."

So what's in it?

Well, the game's level cap will be raised

to 100, which boggles my mind – I've not played since... before Pandaria. There's a new class, the Demon Hunter, which looks to be inspired by the class of the same name in Diablo III, and the ability to customise new Artifact Weapons. There's a new continent, the Broken Isles, to explore and grind on, a Class Hall so all the Pallies can hang out and wonder why no-one likes them, and a new PvP Honour system for those who like to gank face in their spare time.

If you want to hand Blizzard your money now, you can pre-purchase either Standard or Digital Deluxe Editions of the game, and this will give you early access to the Demon Hunter class before the game goes live. There's no timing on this one, but it's there if you really like crossbow-wielding killers.

There's a beta test coming, and you can sign up for it at www.wowlegion.com.





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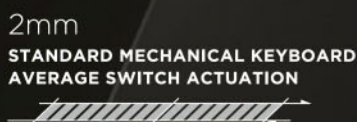
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A fleet of folly

When one mighty starship is never enough...

I fear I may have over-committed to Star Citizen. More than two years ago, in the heady last days before Lifetime Insurance would no longer be a free bonus with any new ship, I, like many others, over-spent just a little. I bought no less than four ships in the week before Lifetime Insurance wound up. Most late at night. A Friday night or Saturday night – that magic time of the week when credit cards like to come out and play online.

It was an orgy of spending that swept the Star Citizen fan base, which you could monitor via the home page 'how much money have idiots like you spent today?' graph. All up I'm about \$1,800 in. That represents – as I convinced myself with no effort whatsoever at the time – a perfect set of ships for every possible space-need. Gotta have a fighter, right? After pondering specs forever, the Hornet FC7 (upgraded now to the twin seat variant) looks like the right chariot for a bit of biff, so add to cart and away. But hang on, I thought a couple of hours later, wouldn't a light fighter also be handy for the sort of fights I don't need to travel far for? Hello M50! Double bonus – it can do races and win them. Plus, is sexy.

But having that apparent balance fall neatly into place only raised a bigger red flag – how can I not have a heavy fighter? Madness! I already had a Freelancer in the hangar, which I thought would be my go-to general exploration and just getting around ship – a thought I thought after initially buying the 315P for just that purpose just weeks earlier, before being lured in by the Freelancer's appealing general purpose utility. So, now in need of a heavy fighter RSI stepped in and offered



the Missilier variant of the Freelancer, thus enabling a perfect way to gain a nice heavy fighter while simultaneously wrecking the general purpose utility of the Freelancer in one neat move.

Now the Freelancer was a mean thing able to carry dozens of missiles into combat, and thus, if the worst came to the worst I could survive any losing battle by unleashing a volley of lovely homing missiles. Fire and flee. Sweet-as bro. Then the thought process shifted along a bit – because you never think these things through all in one go – “hang on, missiles are probably going to be expensive and my battle plan involves firing 20 at a time... how am I going to pay for this?” Earning mun muns via a career as a

best with a crew of six people I have to find and welcome aboard my ship when I'd rather sail alone, or pay for AI peeps to be crew instead who will probably do a poor job and be quite expensive to hire.

But I bought it anyway, because I'd just decided to join a guild so it made sense to have a biggish ship with extra seats. Just in case. Of something. At least I can stand proud and say that I resisted the temptation to go really big and grab a massive megaship. Everyone else was buying a Constellation or Idris. One guy in our guild has six. He's the famous one who spent tens of thousands of dollars buying every single ship in the game. A good friend to have, unless you're his wife.

But now I want a Hull E cargo ship instead of the Merchantman partly because it looks cooler, but mainly because it has giant movie screens on the side of its containers so others can watch TV on the side of your spaceship, because nothing personifies the future quite as succinctly as this gloriously wasteful frippery.

It's been two years since I bought anything in Star Citizen. I have eight mighty vessels in my hangar, though it's been a long time since I walked around them at 20fps having a perve. I read about more movie stars filming cut scenes for the standalone game Squadron 42, that few Star Citizens actually seem to care about, and I wonder when I can sail the voids of deep space. I've been pondering selling my account and starting from scratch with a single shitty ship and actually earning a new fleet within the game – you know – the beautiful idea most of us got hooked into in the first place for. **PC**

Nothing personifies the future as succinctly as this gloriously wasteful frippery

space fighter pilot is probably a weak plan because everyone will be a better pilot than me and my ship will always be damaged and repairs are expensive, and weapons are expensive... Hello Banu Merchantman! Add to cart. Now I can cruise around the cosmos hauling megatonnage of rocks and shit and earning a fortune as a trader/hauler. And it'll be a nice peaceful side to the game that I'll enjoy, too. God I'm smart.

Then sexy ships that I didn't need started coming along. Hello Retaliator, my new \$300 extra-extra heavy fighter. It's like the Freelancer Missileer, but carries exponentially more costly torpedoes instead of plain old only semi-bankrupting missiles, and works



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Take some ex-Yager developers (Spec Ops: The Line) and an alternate future in which the Cold War never ended and you get the amazing looking All Walls Must Fall. You play a special agent using a mixture of social stealth, combat and time travel to avert nuclear armageddon and bring down the wall.

Now Wait For Last Year

Gamers who think they actually enjoy playing vanilla World of Warcraft are living in the past...

The untimely demise of the World of Warcraft fan server Nostalrius has caused much wailing and gnashing of teeth. Totally unlicensed, it could support up to 11,000 players concurrently. It boasted nigh on a million registered users, who all sought the ultimate illicit thrill, the most delicious of forbidden fruit: a vanilla World of Warcraft experience.

Since its launch in 2004 WoW has evolved to the point where many of its original fans feel they are no longer playing the game they fell in love with. By now you have perhaps seen the infamous video where a panel of WoW devs fielded a question from a fan who asked if they would ever let paying customers play on legacy servers. A Blizzard rep said 'no' to this request, but he did so graciously, framing the company line in a positive light by asserting that anyone who wants to play vanilla WoW is delusional: "You think you do, but you don't."

Few were swayed by this argument. But what the punters don't realise is that the game makers at Blizzard are operating on a much higher intellectual level, on a plane that mere Plebeians cannot even comprehend. They're not just thinking about how Blizzard fans are going to get their habit-reinforcing dopamine hits today; they're looking ahead to tomorrow, next year, and the next century of nerd culture monetisation.

We have already seen this foresight pay off with Hearthstone. In two short years the game has grossed over half a billion dollars, and has even garnered some legitimacy as an e-sport. Hearthstone is still, at its core, a service designed to tease wads of dosh from



people with poor impulse control. But it has the veneer of a classy, sophisticated product, not entirely unlike the foil-embossed labels glued to the cheapest bottles of Spumante.

And unlike WoW, a Hearthstone player is unlikely to lose his job and his social life to his addiction. The daily cycle of novelty-seeking, frustration, and exhaustion can be compressed quite neatly into short chunks.

This new gameplay model is a huge improvement on WoW, which assumed that all players had unlimited reserves of time and NEETbux. But it also represents a way to profit from the aging consciousness of a given cohort

■ they're looking ahead to tomorrow, next year, and the next century of nerd culture monetisation ■

of fans, by offering new services that feed on a building sense of nostalgia.

Other game companies are catching on, as we have seen with the Skylanders digital card game. It makes perfect sense. The spoiled children of five years ago are now spoiled adolescents, all with smart phones and disposable income thanks to their guilt-racked, inattentive parents.

Card games demonstrate a next-level implementation of transactional sleight-of-hand. Years ago the boring old 'Season Pass' business model persuaded punters that paying \$200 for a \$100 game is a great deal. The 'Toys-to-life' concept went one step further, convincing children that it's perfectly normal to pay \$500 for a \$50 game.

Hearthstone borders on actual sorcery, spurring spendthrifts to squander \$1,000 or more on a game worth maybe \$10.

From there the only step forward is into a business model of pure gambling. You might think it impossible, but this is Activision Blizzard we're talking about. They jumped at the chance to buy the outfit that makes Candy Crush for US\$5.9 billion. Don't be surprised if they soon make a play for Aristocrat Leisure.

Wargaming didn't quite get there with World of Tanks Generals. Not because there's anything wrong with digital card games, but because they were offering it up to a cohort of customers that were still playing World of Tanks itself. Far better to have gone with an IP that's been out of circulation for a while; something like Strike Commander, Master of Magic, or Falcon 3.0. A service for gamers with slowing reflexes and greying hair, for whom fun is but a memory.

Just imagine: In the near future your favourite Intellectual Properties will change their form as you age, adapting to the degree to which you've given up on life. We can expect to see The Ancient Art of War scratch cards, Leisure Suit Larry Viagra pills, Zork-themed retirement homes, and Colossal Cave coffins.

And as for the actual gameplay, just as Arthur C. Clarke once said that any sufficiently advanced technology is indistinguishable from magic, any sufficiently advanced video game business model is indistinguishable from a poker machine.

Remember, if a game that you've invested thousands of hours in seems to be mutating out of control, just know that you don't actually want to enjoy playing it. You think you do. But you don't. **PC**



JAMES COTTEE
has never honestly
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life, ever



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TERROR FROM THE DEEP



WHO JULIAN GOLLOP
WHERE SNAPSHOT GAMES
WHY PHOENIX POINT

The creator of X-COM has gone indie, and will soon be crowd-funding a spiritual successor to his breakthrough hit. We talk to **JULIAN GOLLOP** about his plans to surpass the efforts of Firaxis...

Julian Gollop created X-COM, and in the decades since he has made a string of critically acclaimed strategy games: Laser Squad Nemesis, Rebelstar Tactical Command, Ghost Recon: Shadow Wars, and more. Now in charge of his own indie studio, Julian is finally in a position to return to the genre that made him famous. With Phoenix Point he's taking the opportunity to address what he sees as some systemic flaws that have plagued the X-COM series.

"The game can actually start really tough, because your soldiers are basically crap. And you get to a point in the game where you've managed to develop your squad of super-soldiers, and suddenly stuff gets a lot easier [laughs]. And again, I've had this problem with the Firaxis X-COMs as well. And X-COM 2 in particular, which I played recently. I thought that the initial stages of the game were potentially very tricky, especially for a player that's not familiar with the game yet. But I got to a point where it was getting very easy. And I guess it is part of the way that your soldiers develop into super heroes, and the fact that you can't really afford to have them get killed. You can get a situation where you're spiralling down into oblivion, and you're on that downward slope, and there's almost nothing you could do to get out of it. Or, you tend to be on the opposite spiral, going up, where things are getting easier and easier.

"That kind of pacing issue is something that has plagued X-COM. I think there are ways to fix it, and one thing we are going to attempt is that in our scenario the aliens themselves have an evolutionary programming, in the sense that they don't have quite the sentient intelligence that you have to start with. So you've got this advantage of intelligence and technology, and the aliens have this advantage of just sheer mass."

In the near-future world of Phoenix Point an alien microbe has infested the

oceans, contaminating all marine life and wiping out most of the human race. It is this insidious, rapidly changing biome that will keep players on their toes. "Effectively the aliens will respond to your successes. If you start beating them in battles, if you start giving them a big pummelling, they will attempt to respond through their evolutionary process and they will come up with stuff that is going to give you a severe challenge. And then it will put you on the back foot again, maybe for a little while, until you figure out a way to counter it. Again, you might gain the upper hand, but again, that will force another evolutionary step from the aliens."

■ ■ Julian confirmed that the 'spinnyglobey thing' of the '94 X-COM's interface would return ■ ■

Through this mechanic, Julian's team at Snapshot Games will try to fix the problem of difficulty spiralling up or spiralling down. He's also planning to largely do away with perma-death. "In Phoenix Point it's going to be a lot more difficult to actually kill a character. Whereas you will be able to knock them out in battle, and they will be disabled, unconscious, and so on, it's going to be much more difficult for the aliens to actually kill them. And you're not constantly trying to [laughs] save-scum, or whatever, to fix things.

"It means that you don't have to be so obsessively protective of your best characters. And it also means that rookies will always have something to contribute to

a battle, even if they're not quite the same level as your more experienced soldiers."

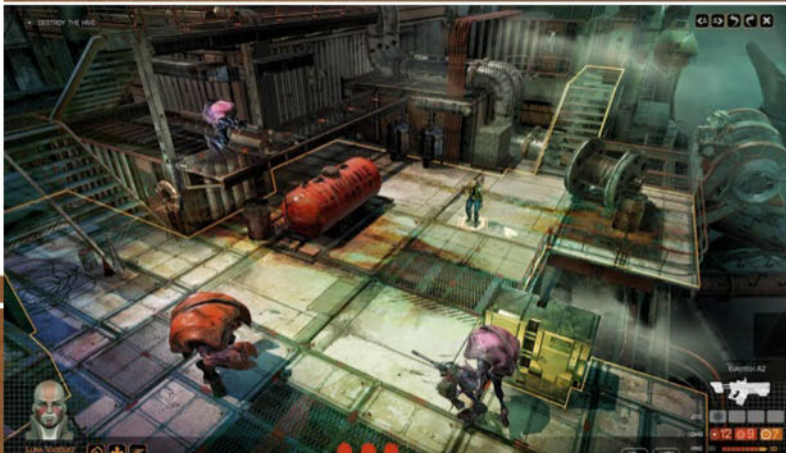
He's also keen to deliver a fresh take on how the strategic level works, which has been a real bugbear for him in the Firaxis X-COMs.

"Obviously, in the original X-COM, that is, my X-COM: UFO Defense, you had a simple, but relatively engaging mechanic where you had countries funding you, you had to respond to threats in order to maintain your funding, and you used that to fund bases, and your research, and your forces. When you go into tactical battles, you recover stuff, and that will benefit your technology and so on, which you can then sell... It's all these interactions going on which were pretty cool.

"Then the Firaxis X-COM very much streamlined that bit, and it is all about building bloody satellites as far as I can remember [laughs]. Which got annoying. But then in X-COM 2 they changed it radically again, and you've got this almost board-gamey feel where you're hopping around in your mobile base. But I'm still not satisfied. Either with my original X-COM, or even the Firaxis X-COMs, when it comes to that strategic world view scale of the game. The base-building bit."

Julian confirmed that the 'spinnyglobey thing' of the '94 X-COM's interface would return. "We're going to do something which is similar to the original X-COM: UFO Defense, for sure. In the sense that you have a degree of freedom, and you can build and construct bases anywhere in the world.

"In Phoenix Point's case, though, you have to expand carefully, because you don't initially have a global reach. So you have to deal with things at a local level. And expanding can be a case of trying to locate and refurbish air bases, or to actually have agreements and deals with human factions for refuelling and operating your aircraft.



“So the strategic position of stuff on the world becomes much more important. Whereas in the Firaxis X-COMs it wasn’t really important. Or certainly in the initial one it wasn’t. The new one, X-COM 2, has this idea that you’re contacting the resistance, and building up your contacts, and so on. But ultimately, it felt to me that there weren’t enough really interesting decisions there. If you see what I mean.”

Phoenix Point will force the player into conflict not only with terrifying platoons of gargantuan crab creatures, but also with other factions of human survivors. The scarcity of resources will force you to deal with these factions, and their conflicting ideologies will make some skirmishing inevitable – base invasions will be another returning feature.

This brought us to another huge problem with the new X-COM: how players respond to the cruelty of the Random Number Generator. “Which is a big complaint from a substantial... minority of players, I guess. You get these complaints whereby: ‘I had three 80% chances to hit in a row, and they all missed! And the AI always hits!’ You see these complaints frequently. Or: ‘I’m standing next to an alien, I’ve got my gun in his face, and I still miss!’ This kind of stuff. So, we are figuring out a way to deal with this issue, so these players are not frustrated by these RNG issues.

“And this is also something which we got for Chaos Reborn, which is unashamedly... basking in RNG. It absolutely revels in it. And we found that it is quite divisive. Some players really enjoyed it, and a significant minority really just can’t deal with it. They just cannot cope with it. I’ve come to this conclusion that fundamentally many players cannot deal very well with RNG-based systems in games. And you need to figure out a way to mitigate their issues with it.”

Julian cited the randomly-generated levels of Invisible Inc. as a good example of how to circumvent RNG dread. “They use input randomness, but no output randomness. In other words, it’s all about how the level is created, is where the random elements are. But the actual mechanics and dynamics of the game are, from the player’s point of view, quite deterministic.”

Board games have greatly influenced Julian’s thinking in recent years; both Star Wars: Imperial Assault and Star Wars X-Wing Miniatures have impressed him. He will be reusing some elements from his under-appreciated 3DS game Ghost Recon: Shadow Wars, but perhaps the biggest inspiration for Phoenix Point is Incubation, a cult classic turn-based tactics game from 1997. “One of the interesting things it did is that when the aliens moved, sometimes you would see the game from their point of view as they’re moving in to attack your guys. And that really was quite unnerving.”

In parting we asked Julian if he had any words for his millions of fans, to reassure them that Phoenix Point will be a true spiritual successor to X-COM. “Well, you can say that we are definitely going to put the fear back in to turn-based tactics [laughs]. And we’re going to put the strategy back into the strategic layer. And it’s going to be as deep and as involving as they could possibly expect it to be.”

The Phoenix Point crowd-funding campaign is due to launch this May. For details, visit www.PhoenixPoint.info. **JAMES COTTEE**

Smell Ya Later

Gaming nostalgically is best done with a new purpose and a pungent aroma.

Being your classic computer nerd; suffering from chronic allergies that leave me with a permanently blocked nose and Chief Wiggam voice, I don't think about my sense of smell very much, really. I feel like I can live without it. Occasionally, though, I've read articles about how aromas can conjure powerful nostalgic feelings for people. I'm interested, but it's always been a moot point for me, until this month. Indeed, I guess the desensitisation treatment I've been on for years has actually worked enough that I can notice smells again.

So, I was sleeping fitfully one night last week, after seeing a band, with my ears ringing and that characteristic smoky smell in my hair, when I realised no-one had been smoking at the venue. It was an RSL. I sleepily turned to gaze out of the window, seeing the valley we live next to glowing with fire across several kilometres. It was just a back burn, but the smell was overpowering. There has certainly been smoke in my life since, but my most powerful smoky memory was formed during Sydney's 2001 bushfires.

I'd missed Christmas dinner at my parents' house in The Blue Mountains because the highway was closed. Then, my dad and I spent Boxing Day cleaning out the gutters, sitting on the roof with beers and watching the fire drizzle down the opposite ridge, then fizzle. I stayed over and we played Heroes of Might and Magic III until the early hours, assuring ourselves that we wanted to keep watching the fire a bit longer, just in case. It's, basically, a perfect memory. That smoky night last week, it was surprisingly hard to force myself to go back to bed and not boot up the game.



I'm no stranger to the lure of nostalgic gaming, but the nocturnal, smoky smell added a whole new layer of compulsion. I did go back to sleep but I started playing the following night. Although I'd previously rifled through every skerrick of content, from the massive expansions to the faction-based chronicles and mods, I've specifically wanted to go back and beat the last scenario of Shadow of Death without Town Portal. Weirdly specific, I know. TP was that one overpowered spell that ruined, what I remember as, the perfectly balanced campaign.

It's always a risk, going back to games you remember as perfect. Does the quintessential gaming experience

elements gradually. From the very first human scenario in Restoration of Erathia, you're expected to handle armies, cities, mines, dwellings, heroes and terrain. You may not notice, for absolutely ages, that those imps standing next to your pikemen are causing negative morale, but they are.

HOMM III expects you to play by all the rules at the outset but it's forgiving, locating mines close by and allowing you to capture neutral cities. Initially fixed, then customisable, difficulty settings also influence AI behaviour and starting resources to, very gradually, enhance the challenge. Towards the later scenarios, you'll find yourself starting with one city while your opponents have more. Knowing your enemy, by intermittently commanding them along the journey, ensures all aspects of gameplay are organically introduced before they are stacked against you.

My favourite part of RoE, and I remember this well, is when the game allows you to meet the neutral, bestial factions. Basilisks! Swamp! So this is what Pathfinding and Logistics are for. What happens when unaligned AI players are behind a garrison? Fools rush in where angels fear to tread. And, speaking of angels, who needs resurrection when you have a five-headed Chaos Hydra decimating all adjacent stacks? Well, keep your hydra or learn to spread out. What is The Holy Grail, how is it found and what does it do? By the first whisper of it, you'll be desperate to know.

So, rather than a campaign which gets incrementally more complex, I think of HOMM III as gradually inviting you to experience more of the complexity that was always there. **PC**

■ those imps standing next to your pikemen are causing negative morale ■

really feature a lengthy crotch-cam on Queen Catherine's chainmail g-string in the opening cutscene? (I had not remembered that.) Also, can you really not play and save two or more campaigns simultaneously? A few weird sexist and tech-related issues aside, I can say that HOMM III is one game for which you can expect your nostalgic love to remain ever strong, and not turn to bitter disappointment.

The campaign really is great and I want to touch on why, because I'm having trouble thinking of contemporary games which feature such carefully handcrafted progression. It's all roguelike this and emergent that, these days. For starters, in HOMM III, forget tutorials and adding



MEGHANN O'NEILL, at the age of 20, got HOMM III's black dragon as a tattoo on her right hip. As game related body art goes, it surely has the toughest stats, even if it's starting to look a little retro.

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A Collection Aside



Expectations, and whether they are met, subverted or challenged, can help define your gaming experience. This month, **MEGHANN O'NEILL** found immense peace in an entirely sensible garden. After all, as she says to her kids when they are annoying each other, "Don't plant corn and expect tomatoes." Of course, another game in this collection gives you a spiteful eraser that only rubs out useful terrain, not deadly razors.

OUTLINE

DEVELOPER DANIEL LINSEN

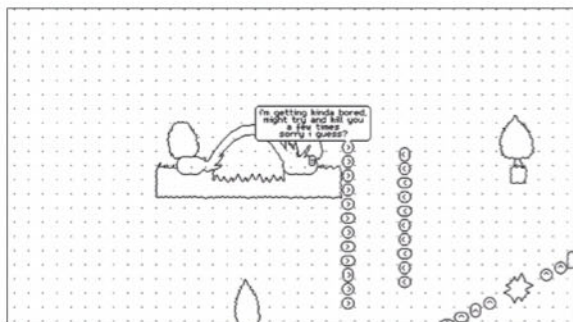
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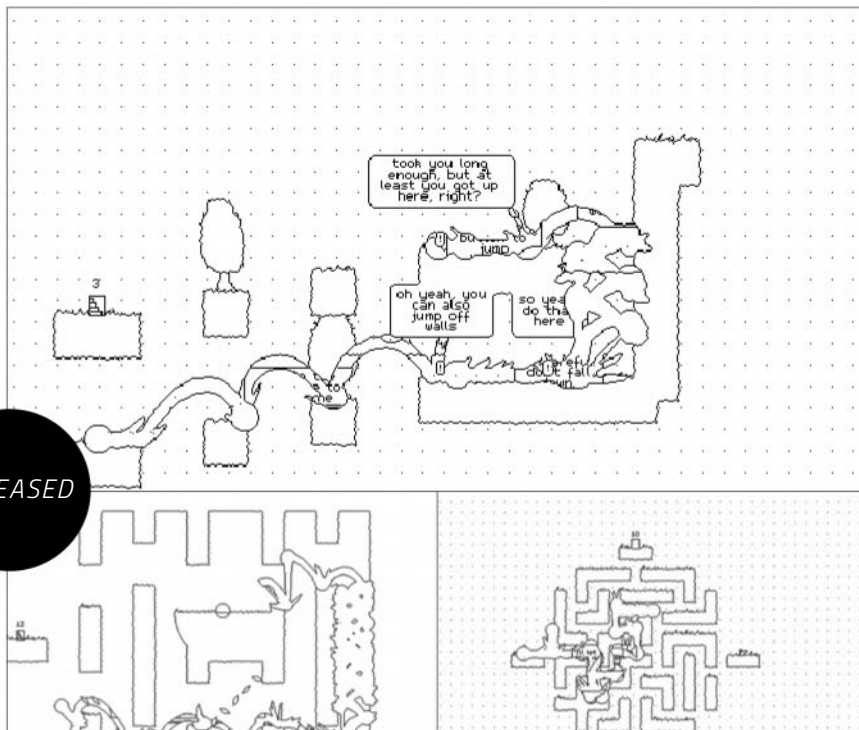
I see a lot of platformers with a gameplay twist. After all, why would indie developers be invested in making something that isn't special and different? Games like *Kalimba*, where the control scheme moves two totems simultaneously, force the player to approach even the usual running and jumping in new ways, and it's a great thing. Interestingly, I find that discovering these unique twists never gets boring. I'm delighted every single time.

So, I've been playing *Outline* by Daniel Linssen, the designer who made the supremely lonely desert roguelike, *Sandstorm*. His new release is a platformer set on a line drawing in a notebook and you are an eraser. Just consider that for a moment. Logically, perhaps you should have one shot at the level, removing everything in your wake. You'll soon discover, however, that this game doesn't care overmuch for logic.

Like in *World of Goo*, there are exclamation signs which offer advice on how to play. One of the first instructs you to jump on spikes and subsequently laughs at you when you die. The narrator is lightly malicious in a way that made me want to play well. Often signs are placed in highly dangerous or pointlessly divergent locations. Were I less invested in proving to the game that I wasn't bad at platformers, I would have surely skipped them.



RELEASED



This is the thing; the more the game lures you away from your primary objective, or reaching a door to the next level, the more lines you rub out. In most cases, platforms still exist, you just can't see them anymore. You're looking through the page to the previous level. Other things, like circles with arrows you need to bounce from, are properly rubbed out by a careless moment of misplacement. What can't you rub out? Deadly, spinning razors, of course.

The experience is infuriating and really clever. My favourite level was an early maze where you are forced to backtrack after getting a key. There are multiple paths through and, much as you don't want to admit it, it is impossible to remember where walls once were. You have to find the paths which make minimal impact on the features that

orient your journey. And, you'll still need to make several leaps of faith onto platforms you only half remember.

Navigating around obstacles you know are there, despite seeing something completely different, is like trying to get to the toilet at 2am, half asleep, without turning on the lights. You can probably do it successfully in the house you've lived in for ten years, but a pokey hotel room in Vietnam? (I nearly went in the closet. Long story.) *Outline* is similarly tactile, too. There were fingerprints all over my monitor after only a few levels.

The best way I can describe *Outline* is as an infuriating paper, pencil and eraser game you might have played with someone at the back of a boring class one afternoon at school. This person definitely didn't like you very much and thought they were funny. You wanted to beat them just to prove you could, even though their rules were ridiculous and a cute guy was making eyes at you from the second row. The twist is, you're secretly enjoying yourself more.

NELLY COOTALOT: THE FOWL FLEET

DEVELOPER APPLICATION SYSTEMS

PRICE TBA

www.nellycootalot.com

■ My parents are English and I grew up with their humour, which was dry, witty, and often a bit hurtful, while being affectionate and standoffish. As such, I wasn't surprised to find that Nelly Cootalot: The Fowl Fleet had been written by British comedian, Alasdair Beckett-King. The game is funny, even lightly, all of the time. Normally, I'd be slightly wary of a comedy title, given I actually remember the Looms more fondly than the Monkey Islands, but this is a really nice game to play.

The original 2007 game, Nelly Cootalot: Spoonbeaks Ahoy, passed me by somehow, but I've since looked it up and it's absolutely fabulous freeware. Apparently, it was also a love letter to the designer's girlfriend, on whom Nelly is based. Consider starting with the first game before continuing your on voyage, as characters and story will be enriched by experiencing both. The content is suitable for the family, too, without alienating the adults.

Nelly is a conservationist who loves birds. The game opens on a ship where she is working in its mailroom. As she becomes aware Widebeard is kidnapping her feathered friends, she mails herself off the boat, in pursuit. The first hub is rather small, but introduces players to the style of puzzling that can be expected. You need to listen carefully to what you are required to do, before finding solutions and repurposing equipment. It's tricky, but hints are everywhere.

Beyond the usual inventory-based puzzles, there are occasions where Nelly has to interpret detailed information and represent her findings graphically. It's nice to have to use one's noggin in order to progress, as well as follow a trail of objects. She also utilises the help of a bird, voiced by Tom Baker, the Doctor Who of my early childhood, similarly to how you can use Crow in The Longest Journey, only without the sass, mostly.

Soon enough, you'll find yourself in The Guttering Howls and a massive town reminiscent of Woodtick in Monkey Island 2, except with more airships and Asian food markets. The objectives expand out from a few to a great many. It's nice to be able to work on developing a reputation, for example, while mulling over how to steal a sword in the meantime. You never know which solutions will lead to other solutions, so it lends itself to creative exploration.

RELEASED



■ utilises the help of a bird, voiced by Tom Baker, the Doctor Who of my early childhood ■

You will want to right-click on things, if only to hear Nelly's commentary and silly one-liners. There's a guy called Gusti Nethers who is considering changing his name to Stormy Longjohns. That stuff. And a seagull who wants his egg to grow up close to all the best schools, of fish. It's genuinely smirk-inducing. The art is simple, but plentiful, and the pirate music is fantastically jaunty in a way that only becomes annoying when you're stuck.

Indeed, this was one of those adventure game reviews where I was given a Steam key before release and got stuck almost immediately. I did ask for a hint and got hilariously chided by a representative for the small, German publisher. I do believe this is the first time I've ever needed to find chest hair for a man, but never mind. Nelly Cootalot: The Fowl Fleet is a truly delightful experience. It conjures both nostalgia and delight at its truly unique qualities.



STARDEW VALLEY

DEVELOPER CONCERNED APE
PRICE \$15
stardewvalley.net

■ Stardew Valley is one of those games that suddenly saturates your social networks. People talk about it and you get all excited, but don't yet know why. My first real contact was reading a Gamasutra article titled, "The four-year self-imposed crunch that went into making Stardew Valley." I read it with a kind of horrified curiosity as to what possible good could come from a young man working for so many hours. Well, Stardew Valley is the answer. It's really good.

From the opening sequences you learn that you are loved, by a grandfather who is giving you his farm, and by the game which provides perfect cutscenes in elaborate, Gamemaker or RPG Maker, even. This game was made in C#. And, as well as the code, Eric Barone also created all of the music, sound, story and art. I tried to contact him to ask for a review copy, but he didn't reply. He's a (now very busy) one-man team. I bought the game.

Honestly? That it sold 425,000 copies in the first two weeks is probably all you need to know. Skip reading this review and just buy it, if you like. I could probably also encapsulate the experience in that one word; love, but I would certainly like to elaborate. I am in love with a game that loves me. There are no cut corners, no cheesy exploits and all the real, meaningful engagement in the world. This is the game you cannot wait to come home to after a stressful day.

As an homage to Harvest Moon, farming is, ostensibly, the focus. You can buy seeds or forage for wild plants to craft them. Hoe a plot then plant, water and, eventually, sell the fruits, and vegetables, of your labour. As with everything in the game, things take time. The first seeds you are gifted mature in a few days. Most others take a week, or more. Some plants are spent, once harvested, others yield an ongoing, seasonal



RELEASED

■ Stardew Valley is where good RimWorld colonists go when they die ■

crop. Watch out for Summer.

After expending your energy farming, there are many more ways to while away the days. Collecting coral at the beach is quite lucrative, or find and donate artefacts to the museum. One of my favourite moments was chasing my chooks through the grass after the several weeks it took to buy, build and start using the coop. Then, after it got dark, I actually got lost on my own farm. It's scrubby land that takes forever to clear and develop. Patience is essential.

There are very few fail states, besides slow progression. You aren't required to pay rent or to fix your axe, hoe, pickaxe or sword. Upgrade them, yes, for money and time, but not to maintain the basic models. Having said this, fall in combat and suffer financially by dropping gold and items. The mine, where you gather metal resources and complete tasks for The Adventurer's Guild is procedurally generated, but saved every five levels. Rescued miners have to rediscover levels, too.

Combat is a matter of understanding enemy movement, boosting stats with gear and clicking madly. This isn't to say you can't play well, or badly, just that it's relatively simple. Monsters drop the weird loot you need for the best fishing bait, and such. You'll learn how to craft incrementally, by completing journal objectives and, painstakingly, making friends. You can even marry but, oh, the hoops to jump through first. Perhaps better to just let the dog sleep at the foot of your bed.

Stardew Valley is where good RimWorld colonists go when they die (of frostbite, being eaten or madness.) It's a gentle, loving place where people are happy to see you and perfect pink leaves fall from trees for whole days at a time. Saving progress after sleeping is a masterstroke for creating that "one more day" feeling, mostly because you always wake up refreshed and ready for something new. The first time I awoke to rain on the tin roof I knew I wanted to stay here for a long while.

SHARDLIGHT

DEVELOPER WADJET EYE GAMES

PRICE \$15

www.wadjeteyegames.com/games/shardlight

■ When I originally started writing these indie pages, I wanted to include designer interviews and insights into the process of game development. Perhaps you are interested in making games as well as finding content that resonates with you. It's totally doable, and I'd like to support your process. There have just been so many indies to review lately. So many. Luckily, the magazine includes a lot of indie content, as well as just in this collection.

So, I'm going to bring you the artist I wanted to interview last month, when I wrote up point and click adventure, *Shardlight*. Artist and Animator, Ben Chandler and I became friends before he was employed by Wadjet Eye. His insights into design are endlessly fascinating and I'd really like to share some. This interview discusses how to find and create that one special thing that can become central to your theme and narrative.

RELEASED



Ben Chandler,
Artist and Animator,
Wadjet Eye Games.

How does art support ambient storytelling in games?

Objects and environments are evidence of lives; a well-kept garden tells a different story to wilted plants. Art reflects characters, changes, interests and ambitions. I like to put the remnants of events and ideas into scenes.

What was the original brief for bringing *Shardlight's* world to life?

Society exists after catastrophic war. It has left the environment, infrastructure and economy in ruins and people afflicted with a deadly plague.

Why did you draw the first shard?

I wanted a way to inject vivid colour into the otherwise dull, muted world, but I still wanted it to suit the setting. The plague theme is a focus and green seemed a natural colour to give the setting a sickly glow.

How do the shards work?

There was a product in antique glass-making called 'uranium glass,' with uranium added to colour it. Under ultraviolet light this glows a vivid green. I decided, in our world, that the ozone layer has been ruined enough to let in much more ultraviolet light from the sun, which makes this glass glow brightly in daylight.

What kinds of storytelling moments do the shards lend the world?

It allowed me to replace the usual reliance on electric lights with something more primitive and reinforce the notion that these people scavenge for the things they need. The idea that even smashed glass has worth in this society speaks for the scarcity of resources.

How did shards evolve into an iconographic part of the game?

The first scene drawn for any game becomes a sort of "style guide" to which you refer for the rest of the game. The green offsets the browns and yellows so well that I kept referring to them, and eventually it seemed natural to make the cursor a shard of glass, and then the interface. Even in the scenes where I didn't paint any shards, the interface itself adds colour and life to the screen. **PC**



10 to Watch



DANGEROUS GOLF

DEVELOPER THREE FIELDS ENTERTAINMENT
PUBLISHER THREE FIELDS ENTERTAINMENT

DUE SOON

www.threefieldsentertainment.com/dangerous-golf/

■ Dangerous Golf lets you play golf in the most unlikely places, such as inside a china shop, hotel kitchen and medieval castle. The developers worked closely with Epic's Unreal Engine 4 team and NVIDIA to push the boundaries of their PhysX, Apex Destruction and Flex, physics technologies. And, it certainly shows with the amount of senseless destruction you can wreak with a simple golf ball. You can smash priceless heirlooms, set fire to things and much more.



HEROES OF ISSACHAR

DEVELOPER BLUE MANA ENTERTAINMENT
PUBLISHER BLUE MANA ENTERTAINMENT

DUE MID 2016

www.blumanaentertainment.com

■ Build a thriving city and defend it with your crossbow skills in this city builder FPS hybrid, set in an eerie fantasy world. The game will support both single and local co-op modes and will include RPG elements such as dungeons to explore, lots of loot to collect and companions who can join your party as you quest. As you build, enemies will attack your cities so only a well thought out building strategy will ensure you survive to fight on another day.

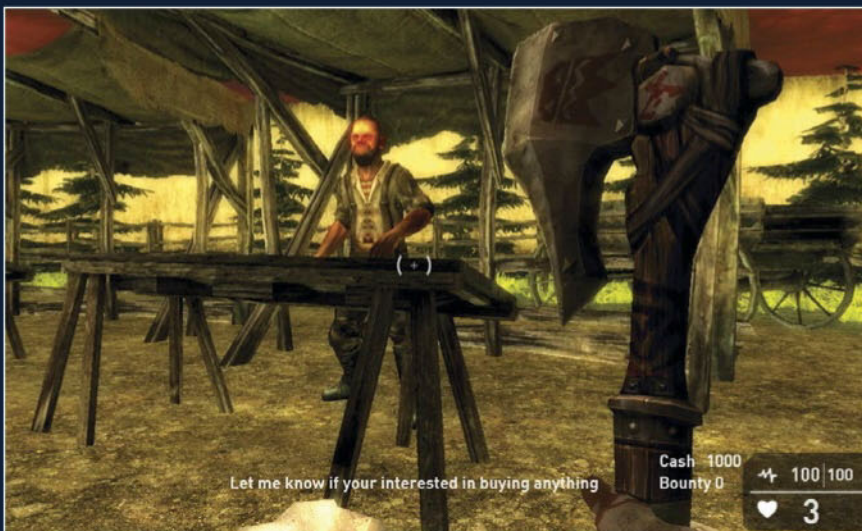
PROJECT RPG

DEVELOPER ACUZE INTERACTIVE
PUBLISHER ACUZE INTERACTIVE

DUE 2016

www.acuzestudios.weebly.com

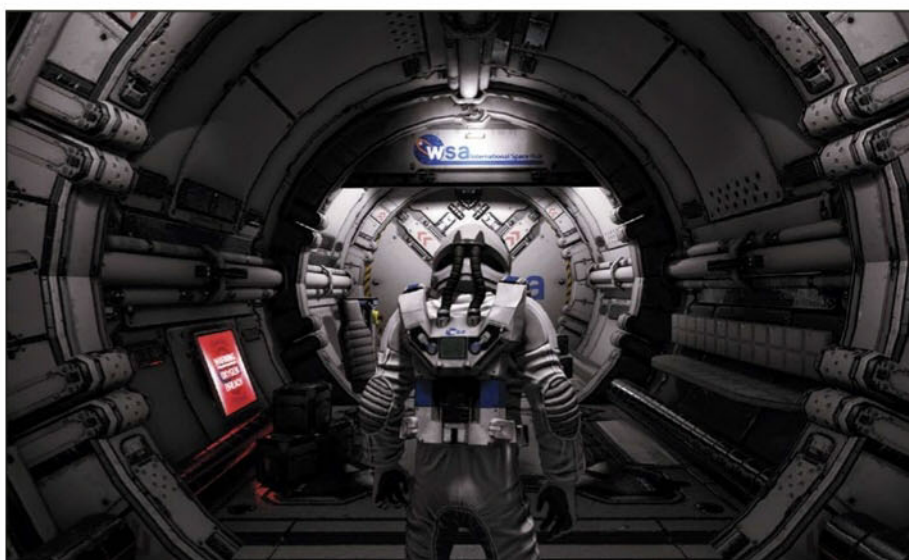
■ The developers of project RPG say the game will be a mashup of different genres, incorporating horror, mystery and action – which interests and worries us equally. Essentially it is a single player open world RPG in which you have to save your family from an unknown fate by carrying out quests assigned by villagers. There will be all manner of enemies such as ghouls and zombies to fight, strange places (like an asylum) to explore, a crafting system, in game farming, collectables to find, as well as a weapons upgrading system.



LAST DAYS OF OLD EARTH

DEVELOPER AUROCH DIGITAL
PUBLISHER SLITHERINE LTD
DUE OCTOBER 2016
www.slitherine.com/games/lastdays_of_oldearth_pc

■ Last Days is a futuristic strategy game set in a cold and inhospitable environment. Gameplay is turn based and players use a deck of cards to make tactical decisions to lead their chosen faction to victory. The early access version already includes both single and multiplayer modes but the full version promises some big extras including up to 50 units, full deck-building customisation, stealth and advanced capabilities for flying units.



DELIVER US THE MOON

DEVELOPER KEOKEN INTERACTIVE
PUBLISHER KEOKEN INTERACTIVE
DUE AUGUST 2016
deliverusthemoon.com

■ You are a rouge astronaut sent to the moon and tasked with preventing our species' extinction in this lunar survival exploration game. You will have the most advanced technology at your fingertips including a jetpack, vehicles, power tools and a robotic companion and gameplay will revolve around you using them wisely to avoid environmental hazards and survive the unforgiving void of space. The game will also be VR compatible via the Oculus Rift in both first and third person perspectives.

THE MIMS BEGINNING

DEVELOPER SQUATTING PENGUINS
PUBLISHER SQUATTING PENGUINS
DUE AUGUST 2016
www.mimsthegame.com

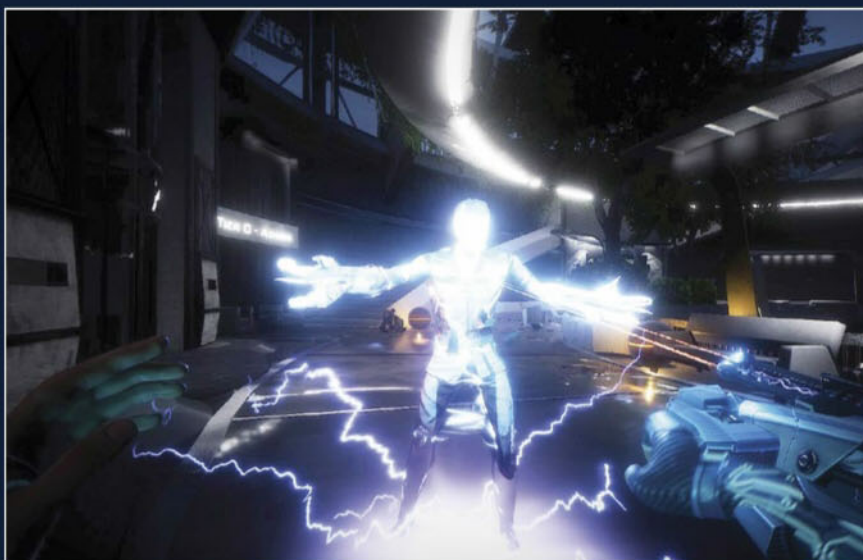
■ Reviews for the early access release of this game are already very positive with reviewers raving about the fun and colourful levels and challenging puzzles. You play as a god-like figure that must take care of your minions 'The Mims' by fighting monsters, saving them from natural disasters and any other number of calamities. You can manipulate your environment, create structures, breed animals and even predict the future using your divine powers.



P.A.M.E.L.A.

DEVELOPER NNYVE STUDIOS
PUBLISHER NNYVE STUDIOS
DUE 2016
www.pamelagame.com

■ You awake from cryosleep to find your once utopian home of Eden wrought with death and danger in this open world horror sci-fi game. Survival is your immediate concern but you must also unravel what happened to Eden as you go. Gameplay will be highly interactive - you can scavenge for supplies and equipment, build technologies to defend your safe haven and can access a vast array of weapons to use on Eden's now demented residents known as 'The Afflicted.'



XING: THE LAND BEYOND

DEVELOPER WHITE LOTUS INTERACTIVE
PUBLISHER WHITE LOTUS INTERACTIVE
DUE 2016
www.xingthegame.com

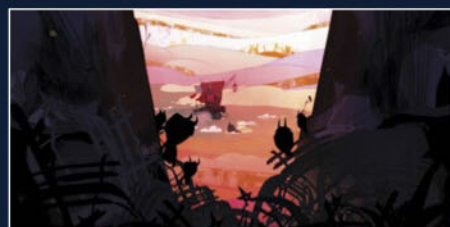
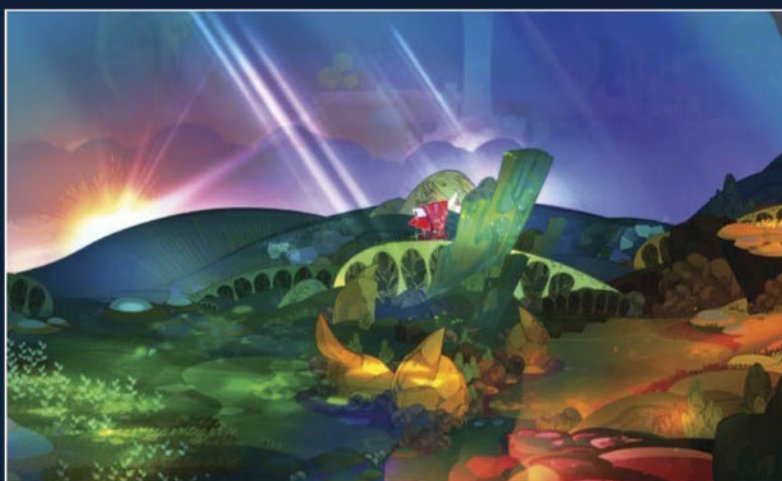
■ There's no skirting around the topic; you are dead. But death takes on a whole new meaning in this atmospheric first person puzzle-adventure game with support for the Oculus Rift. You must travel across the afterlife solving a number of environment-based puzzles with powers such as the ability to make it snow and rain. As you go you will encounter trapped souls that you must set free. Interestingly, the story will be told with poetry, which we think could work really well with the game's serene visuals.

EXPEDITIONS: VIKING

DEVELOPER LOGIC ARTIST
PUBLISHER IMG.N.PRO
DUE OCTOBER 2016
logicartists.com/games

■ This is the much-awaited sequel to Expeditions: Conquistador. It's a single player tactical RPG in which you must lead Vikings from a small Norse village to wealth and glory. You can plunder rich monasteries and villages across the seas, set up trade or battle it out with neighbours. Gameplay is turn based and to succeed you need to know the strengths and weaknesses of each individual in your war band, including how hungry they are and even how fatigued they are.





PYRE

DEVELOPER SUPERGIANT GAMES
PUBLISHER SUPERGIANT GAMES
DUE SUMMER 2017
www.supergiantgames.com/games/pyre

Pyre is by the same developer as Bastion and Transistor, both of which received acclaim from RPG fans for their blend of atmospheric storytelling, lush environments and tactical action. It's a party-based single player RPG in which you must journey across a mystical purgatory and engage in a strange competition called The Rites to lead your band of exiles to freedom. Only exiles that excel at The Rites can find freedom and your decisions will determine who succeeds and who stays in exile forever.





KILLING THE SPACE CAT

NO MAN'S SKY

DEVELOPER HELLO GAMES
PUBLISHER HELLO GAMES
DUE 23 JUNE, 2016
no-mans-sky.com

In a gaming world that's seeing the resurgence of the space simulator with the likes of *Elite: Dangerous* and *Star Citizen*, *No Man's Sky* dares to soar against the solar wind with an accessible starry-eyed offering.

No Man's Sky is a tricky game to pitch. It looks like a space simulator, but it's not. It lends itself to multiplayer, but that's not really there. Procedural generation should result in an overwhelming amount of amazing things but, by design, there's a lot of the mundane in No Man's Sky universe.

Even if you're abiding by developer Hello Games' simplified No Man's Sky gameplay equation – exploring, fighting, trading and survival – it doesn't help to sell the interconnected nature of those pillars, nor the gameplay mechanics outside of them. Hell, even after an exclusive half-hour presentation and half an hour of hands-on time with No Man's Sky's starry second heaven, plus a chat with Hello Games founder and lead developer Sean Murray, it's all still a bit blurry.

Despite this blur, here's what Murray helped us to discover as we made the tiniest of scratches on the surface of No Man's Sky daring and expansive game universe.

BILLIONS OF LIGHT-HOURS

The term "game universe" has never been more fitting, given the breadth of content in No Man's Sky. It will reportedly take players billions of years to find all of the planets in the game,

and that doesn't even take into consideration the scores of hours it'd take to explore the mammoth surface of each of these space rocks.

It's the kind of scope you'd expect from a big-name studio working with a AAA budget, but it's not the case. Hello Games, a UK-posed indie studio, has around 10 developers working on the ambitious space explorer.

Given the scope of No Man's Sky compared to the size of the team, Hello Games has, understandably, had to rely on some clever smoke and mirrors to produce such a visionary game. To this end, Hello Games has implemented a procedurally generated universe that relies heavily on back-end mathematics to do a lot of the leg work.

For right-brain-dominant gamers, the concept of mathematics may read as boring, but that's kind of the point. Hello Games wants you to embrace the boredom. During Murray's presentation of the game, we were shown a behind-the-scenes look at the mathematical foundations of how the game was built. What started off as a lifeless planet with a flat surface, transitioned to a planet comprised of uniform sine waves that looked like mountains but were too uniform to be interesting.

As more sine waves were added to the next planet in a chaotic way, things started to look more random: hills begat mountains and gave



way to ravines. With all of the variables thrown into the mix, he teleported to a planet filled with life that rendered near instantaneously, despite an abundance of non-uniform terrain, flora and fauna. The idea is that by using mathematical algorithms to populate the world, the player can travel seamlessly to, from and between planets, without the need for an initially long loading or respawn time.

On top of this, it means that players that eventually visit the same rock as another will encounter the same thing. "Because it's such a simple formula, it would generate the same for every other player who went there," explained Murray. "So if they fly down to this planet, it generates like this,

into their memory, gets rendered by the GPU, and if they fly away again, it all gets thrown away. It exists for the moment that you're there, but it always exists in the same way."

THE FALL OF SEASONS

Despite the promise of billions of hours of potential gameplay for the dedicated cosmonaut, don't expect to see the impact of time beyond a day/night cycle. Murray confirmed there aren't seasons on planets, with No Man's Sky taking more of a Star Wars approach to seasonally themed planets to account for this. "The planets are generally pretty static," reasoned Murray. "They change in a variety of different ways, but really you're not dealing with

things like seasons, and the reason for that is we want you to explore."

This push for players to explore the planets is also used as a measuring stick for what makes the cut in No Man's Sky. "That's how we decide what goes in the game and what doesn't," explained Murray. "We want you to explore, which means when you visit a planet, we want you to spend maybe an hour or two there and feel like you've seen it. You've

DOCTOR SPACEMAN, I PRESUME

Exploration is probably the biggest gameplay pillar in No Man's Sky. Whether trekking on a planet's surface, discovering space stations, or travelling between solar systems, there's a lot to find. With a bit of luck, you can encounter ancient monoliths or alien traders, both of which can teach you a single word of alien dialect.





seen that planet, and you don't need to just live there. We want you to keep going. If you want to see an autumnal planet, then you should go and find the autumnal planet, rather than just living on one planet."

Despite the lack of seasonal elements in *No Man's Sky* at launch, it's a feature that Hello Games may include at some point. "We could have had seasons and terraforming and things like that, and maybe we will add some of those things down the line," admitted Murray. "But I actually like the idea of this planet being a static thing and I can say to you, 'Hey, check out this ice planet,' and if you ever make your way there, you will see that's a cool ice planet." We can confirm there was no pun intended.

Circling back to the earlier point about boredom, Murray was unflinching in his description of a game universe that's filled with planets that are 90 percent boring, with the intention that the remaining 10 percent of planets are something truly special. "[Maths] does create boring results, but that's part of it," said Murray. "We were showing a planet that didn't have life, and it's important that those exist. It's actually important that there's a fair number of them, because otherwise it's not nearly as exciting as when you find a planet that's rich in life and it's got loads of trees, grass, plants, creatures, and stuff like that.

clouds and on the surface, but the enormity of the planet meant we lost our spaceship within a few minutes of exploration. Thankfully, our scanning binoculars highlighted the seemingly hiding spaceship after a 360-degree view of the environment, but it proved that orienteering proficiency is a handy skill to have. We didn't get lost because everything looked the same, either; we got lost because *No Man's Sky* is constantly tugging at your curiosity to see what's over the next hill. What's on the next planet. What's in the next solar system. You forget to take note of rudimentary considerations such as where you parked your ship.

Those concerned that *No Man's Sky* may well be a cleverly masked walking simulator should take heart in the understanding that it's really more of a curiosity simulator, and an incredibly accessible one, at that. Like any good open-world game, pre-determining a path from, say, spaceship to distant structure is the surest way to guarantee you'll be distracted by a newly discovered cave network, a lake brimming with life, or the tantalising prospect of never-encountered creatures along the way.

But just because such scenarios may feel random, Murray was quick to emphasise that algorithmic beats accidental. "We always say procedural rather than random, and that's because

the enormity of the planet meant we lost our spaceship within a few minutes of exploration

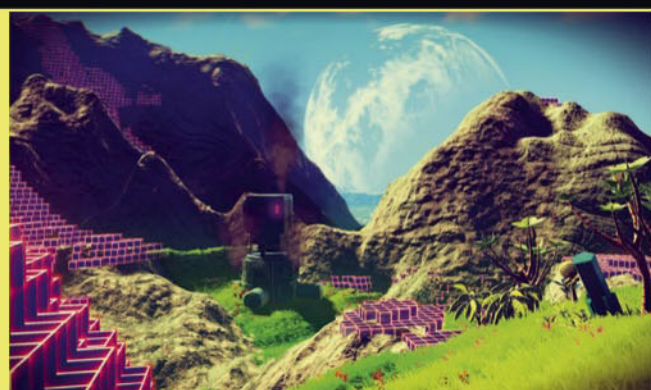
"That becomes less meaningful if you're seeing that time and time again. It's important that, like our universe, nine times out of ten everything isn't perfect, and everything isn't beautiful because then when it is, it's more meaningful." During our time with the game, we did a speed-run of sorts to encounter as many planets as possible. Of the three planets we visited, two were covered in a pea soup fog, which made atmospheric scouting for points of interest close to impossible. On the surface of these planets, visibility was worse.

THE CERTAINTY OF MATHEMATICS

On the third planet, things were a lot clearer when scouting beneath the

the game doesn't just pick randomly," explained Murray. "It doesn't just say, 'This [planet] will have a blue sky, and that one will be a red sky, and that one will be a pink sky. The problem with that is you end up with red planets with red skies and red terrain and red creatures, and it's all just a horrible mess. We try to put some rules into it.

"We try and make the skies created from genuine atmosphere. You can see that when you fly through it and fly in. Most games would just have a skybox. We make it out of atmosphere and we think about what elements would be in it, and what elements you get in atmospheres and then that naturally creates things that look more like skies. The light is diffracted as it goes through them at different wave lengths, so you



LONE SURVIVOR

From what we played, survival elements don't follow the hardcore trend of extending to the need to eat, sleep, and hydrate. Instead, a planet's surface can be hostile in terms of temperature, with extreme heat or cold eating away at your protective spacesuit. Taking shelter resets the damage, and you can create your own shelter if you have the right weapon.

get hardly any green skies, for instance, because that's just a thing: gases hardly ever can create a green sky.

"You end up not getting really dark blue skies, and stuff like that. Things begin to make a bit more sense. We have things [that look] eroded, and it creates terrain shapes that look a bit more real. Our brains are very good at knowing patterns, knowing that a creature would not be able to hold its body weight with those legs, or whatever, and you need some of those rules in there, basically." As far as our limited planetary exposure in *No Man's Sky*, despite the alien nature of the planets, none of them felt off in an immersion-damaging kind of way.

FOUR-LETTER FAUNA

In terms of creatures, looks can be deceiving. Just because a towering beast with Dilophosaurus-like frills for ears and pointy teeth looks like it enjoys dining on interstellar explorers, doesn't mean it will. We shied away from this exact procedurally generated creature, fearing for our digital lives. Once curiosity trumped anxiety, we discovered that it had little interest in us as it stomped off into the distance.

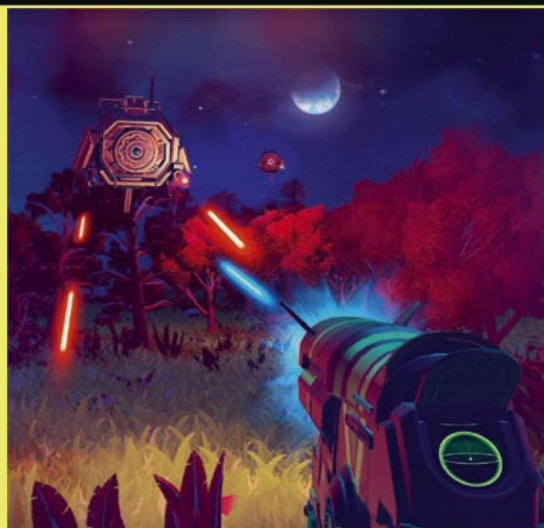
■■ you'll discover creatures that look like a Frankenstein-like combination of genitals which, once noticed, cannot be unnoticed ■■

The creature may have looked comically villainous, but that's also part of the design.

"The nice thing that hopefully people will see is just finding little bits of life and weird creatures," said Murray.

"That's always the thing is that people like the crazy creatures when they find them: the things that look like they shouldn't exist. To be honest, there's kind of a lot of humour to the game from that point of view. You will find people pointing and laughing at some silly thing that's grown two heads and no eyes, or whatever."

Alternatively, you'll discover creatures that look like a Frankenstein-like combination of genitals which, once noticed, cannot be unnoticed. "The amount of times I've seen people name a creature after some appendage, normally a genital or something like that, and then you see it and you can't unsee it," said Murray. "You're like, 'It DOES look like that.'" For those



FIGHTING WORDS

Combat feeds into the simple control mechanics of *No Man's Sky*. Our starting sidearm was more useful for ad hoc resource collection than fighting planetary-defending sentinels, until we discovered an upgraded gun with a devastating secondary-fire ability. Fighting in space was trickier, but only because our spaceship was built more for science than soldiery.





AROLIS-OGUA
TO WARP
REGION
NGPANULAMI TERMINUS
WARP DISTANCE
16.5 LIGHT YEARS

interested in more of a family friendly adventure in the stars, though, take heart that No Man's Sky will include a profanity filter to keep animal naming conventions safe for work. "Human ingenuity is too good for that, I'm afraid," laughed Murray, when he jokingly lamented the exclusion of juvenile naming conventions.

ASTRONAUTS IN A HAYSTACK

In terms of multiplayer, naming a planet's local fauna is about as interactive as it gets. Despite the inherent realities of the unlikelihood of running into another player visiting the exact part of the specific planet you happen to be on, No Man's Sky has been built as an isolated experience. By design, the gameplay revolves around a solitary explorer who starts at the edge of the universe, and is encouraged to travel inwards to the centre. In the same breath, arguably, the entire point of No Man's Sky is to be distracted from the main path thousands of times along the way.

"The chances of you coming across another planet where there is a player in the same place at the same time is actually pretty rare," admitted Murray.

PS4 SKY

No Man's Sky is console exclusive to the PS4. Although no definitive answer has been given to the question of whether there will be cross platform play between PC and PS4, a recent interview with Hello Games Managing Director, Sean Murray seems to hint that the two platforms will not share a server. Whilst this may be a little disappointing should it prove true, having two different servers to share discovered planets will all but guarantee double the amount of screenshots and footage of amazing discoveries. That can't be a bad thing.

"Even if that does happen, you will get a sense of that happening, but you don't go then and play a deathmatch. That's not what the game is about." That said, much like the possibility of planetary seasons and terraforming that Murray alluded to earlier, fans hoping for multiplayer can continue to partially hold their breath.

"Maybe, further down the line, we can introduce those elements, but they will probably be quite alternate to the game, like, in the same way that you see GTA or Metal Gear Solid had a kind of an online component," said Murray. "They're separate to the game, but still in the same universe. There are things like that we would love to do, but they aren't really what the core of the game is about. The core of the game is about being the lone explorer out on the edge of the frontier, and not Quake deathmatch."

A WHISTLING COMPANION

Despite the loneliness of No Man's Sky, the most consistent player companion in No Man's Sky will be the soundtrack. Fusing a traditional album-like track listing with 10 original tracks and six additional soundscapes, instrumental post-rock band 65daysofstatic was enlisted to create the soundtrack for No Man's Sky.

"We jumped at the chance to be involved with No Man's Sky," said Joe Shrewsbury of 65daysofstatic fame. "The game had a really strong aesthetic even early on, and the scope of what Hello Games was trying to make was really exciting. Creatively, we were being given lots of freedom. Essentially, we were asked to, 'Just make a 65daysofstatic record,' although, as the project has grown, we've obviously pushed this remit further. Nevertheless, we understood that it was our music that would contribute to the games identity at a fundamental level, and that level of responsibility was really inspiring."

Shrewsbury and his fellow musicians knew that forging the band's first game soundtrack would be challenging in No Man's Sky. "We knew the in-game music would be very different and would work very differently to the music we were writing," said Shrewsbury. "We didn't know quite

how, but we knew it would have to be more mood-based, less demanding on the player's faculties as they had this whole universe to explore."

Creating a track listing to match the procedurally generated content of No Man's Sky was no small feat, either. The band conceptualised it as something that could stand alone, external to the game. "It had to work in its own right for listeners who'd never heard of No Man's Sky or played a videogame in their lives," said Shrewsbury. "On the other hand, we knew we needed those compositions to have a range of possibilities, variations, textures, that could work outside of the context of a five- or six-minute arrangement."

On top of this, the other challenge was to ensure that the soundtrack didn't descend into a collection of ambient tones, while simultaneously not edging too close to the foreground. "We're feeling pretty confident that much of the audio we've compiled is texturally and sonically aggressive enough that it transcends being ambient simply by definition," said Shrewsbury. "At the same time, a lot of the music is 'background' to the individual engaged in playing the game. We're trying to create something more emotive within that context: instances of music which suggest uneasiness, loneliness, temporality, and so on."

In a race against the clock to experience as much as possible in 30 short minutes, our time with No Man's Sky felt piecemeal, but touched on gameplay elements that made us curious for more. We tried our hand at Red Faction-like excavation with a

powerful weapon upgrade earned by correctly guessing an incomprehensible question from an alien trader. We blasted a



spaceship that took exception to us leaving the surface of a planet, and avoided upsetting planetary sentinels by minimising our resource-collecting mining endeavours.

But most of all, we explored. No Man's Sky may be many things, but at its heart, it's an accessible space exploration title that pulls you in with its unique art direction and constantly distracts you with the possibilities of what you might discover. **NATHAN LAWRENCE PC**

HERE BE MONSTERS

THE WITCHER 3: BLOOD AND WINE

DEVELOPER CD PROJEKT RED
PUBLISHER CD PROJEKT RED
DUE MID 2016
www.thewitcher.com

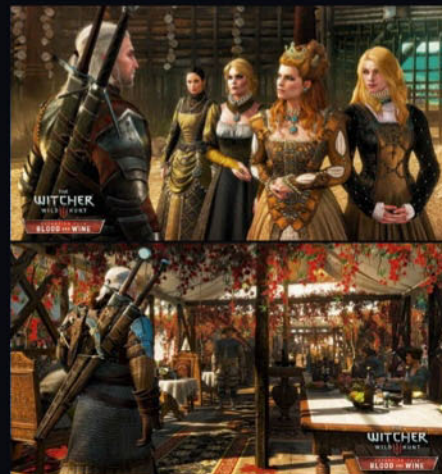
We don't usually run previews of DLC or expansions, but for Blood and Wine we'll make an exception, not only for the size and scope of the expansion but also due to the welcome tweaks it brings to the main campaign. The latest expansion sees Geralt travelling to Toussaint – kind of an analogue of France under King Luis XVI to complete a contract hunting a beast that has been killing, dismembering then displaying the corpses of knights. The Knights of Toussaint aren't too keen on the idea of allying themselves with an uncouth outsider, and a Witcher no less, but when a monster comes calling there is nobody better to have in your corner.

Promising around 30 hours of content, from what we've seen so far, Blood and Wine will offer a refreshingly different feel. Toussaint itself has been spared the ravages of war, so the general tone feels lighter, even though you're tracking a savage beast. The countryside is beautiful and bounteous, not made up of the battlefields, swamps and dangerous forests that seem to make up the bulk of The Wild Hunt. The engine has also been tweaked with new vegetation, making it look even better than it was before.

Unfortunately the new vegetation is limited to Toussaint for the simple reason that the geometry of the main game is too big to have the new vegetation (grass especially) fit without having to manually place every patch in the game.

In addition to new grass textures and other graphics tweaks, Blood and Wine also brings a few new features to the table, including a new mutations scheme and a much, much improved inventory that allows players to easily find what they're looking for over a number of tabs. Armour can now be customised and dyed allowing players to tailor the look of Geralt. During the adventure, Geralt is also rewarded with property, giving him a home that can be renovated to add crafting tables so there is no need to travel to multiple different places to fix arms and armour or create alchemical tools. All of these new features are unlocked once the expansion is started and are then brought back into the main game so you can finish Wild Hunt with the new features if you haven't completed the campaign already.

In the two or so hours we played, only one battle involved human enemies, and that



was during the prelude before travelling the Toussaint. After that battle in fairly short order Geralt faced three boss level monsters, a giant, a Bruja and an enormous stone creature in an arena. While we're sure that humans will definitely pose a threat to the Witcher at some stage of his mission, it looks as though Blood and Wine might see Geralt go back to what he does best – hunt monsters and avoid the affairs of Kings. **DANIEL WILKS PC**

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FIGHT TOGETHER OR DIE ALONE

OVERWATCH

DEVELOPER BLIZZARD ENTERTAINMENT
PUBLISHER BLIZZARD ENTERTAINMENT
DUE MAY 24
battle.net/overwatch/game



Blizzard is a master of melding the best bits of established games and creating a coherent, accessible and thoroughly enjoyable title. Overwatch doesn't stray too far from this design strategy and from what we've played is all the better for it. One aside from a pleasant feeling of familiarity – even though the characters and maps are absolutely unique to Overwatch – the main thing that stood out whilst playing a number of different matches was the fact that teamwork is key to success and going it alone is a sure way to wind up real dead, real fast.

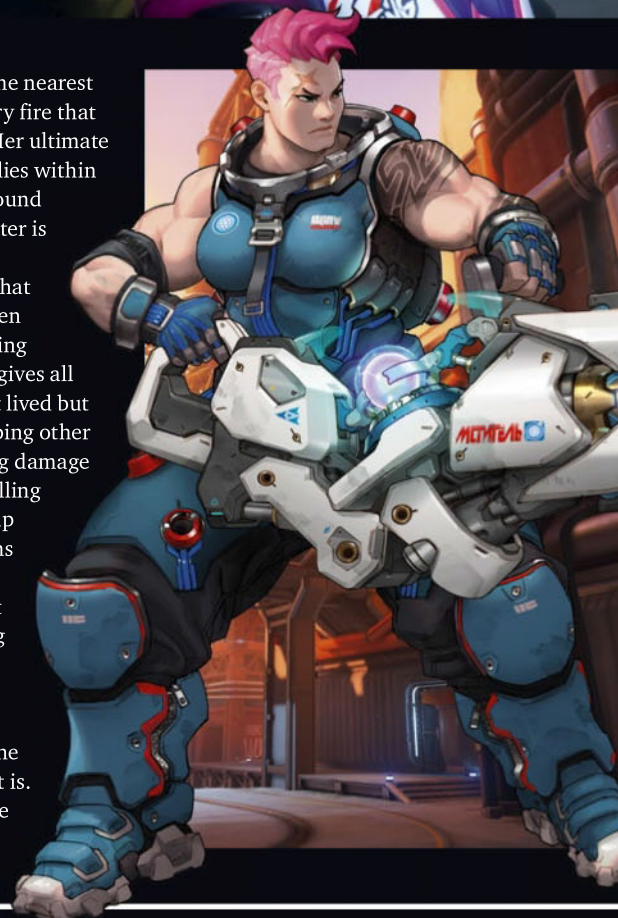
The character selection screen lets players know the weaknesses of their side when it comes to character types. While it's natural to want to grab a damage dealer and smite enemies, a balance between offence, defence and support really

makes a team pop. In broad strokes, Offensive characters bring damage but not much in the way of utility outside their main role. Defensive characters are capable of dealing damage but their real value comes in their ability to hamper the opposing team by creating turrets, walls of ice, traps and the like. Tanks are designed to take damage and protect other players by creating shields or controlling the flow of combat and support characters heal and buff other players to make them more effective.

It's testament to the skill of Blizzard that the character type that is often the least enjoyable – support – is actually a huge amount of fun and the four dedicated support characters play in very different ways. Mercy, for instance, is probably the most traditional healer type, with a heal that gives constant

health and snaps to the nearest target and a secondary fire that buffs their damage. Her ultimate resurrects downed allies within the radius. Lucio, a sound based support character is something of a group buffer, with an aura that can be toggled between a speed boost or healing and an ultimate that gives all allies in range a short lived but powerful shield. Keeping other players alive, boosting damage to ensure a kill, or pulling off a last minute group resurrection that turns the tide of battle is just as thrilling, if not more so, that running around shooting baddies.

So long as you're being supported by the rest of your team that is. From hard experience we learned that





Yoshimi, is that you?



teamwork is key to success and going it alone is a sure way to wind up real dead, real fast



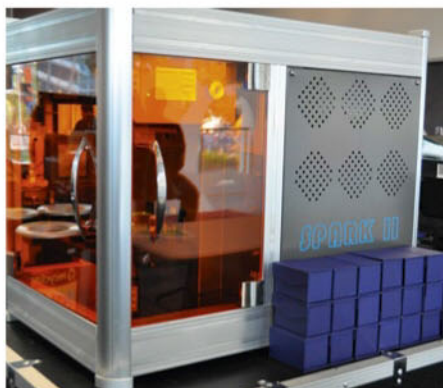
anyone who tries to go it alone, no matter how tough, is not going to get too far. Support and DPS may have low health when compared to tanks, but everyone is equally vulnerable without help, a healer or even just

extra bodies to absorb some bullets. After a few games, teamwork came organically, we started to realise when we needed to

fall back, regroup and make a push. We knew to stay behind the tank and try to keep the healer alive. We used all our skills to make the team work better as a unit instead of just trying to improve individual kill counts. We weren't exactly a well-oiled machine by the time our hands on session finished, but we were a unit. We can't wait to see what teams will be like after a couple of weeks of playing together. **DANIEL WILKS PC**



The last thing you see when playing against Zorine from Gamespot



UPGRADE AUSTRALIA

THE MIGHTY NIGHT THAT WAS

When PC fans and the industry collide in a fest of fun, freebies and gear

They came. They saw. They Upgraded. On a lovely Melbourne night this week hundreds of PC & Tech Authority, PC PowerPlay and Hyper readers piled in for a fest of gear gawking, great gaming, prize fulfilment and beer and food consumerage. It was indeed a mighty night, and one and all got right into a most splendid display of incredible PC gear and fun stuff to do.

Intel brought along a machine that scanned people's heads into a block of crystal. It was quite amazing. Intel also graced us with the presence of ANZ Technical Manager Graham Tucker who led the keynote and answered many questions from the crowd. There was also a bangin LAN there thanks to MSY with gamers head down and deep into the fun zone. Oh, and the F-16 sim was straight out of many people's dreams.

Josh the man Collins from Asus showcased the latest gear and hosted a nice demo and Q&A session with pro

modders. The cases on display here were just amazing.

Corsair Chris showed off the famous Bulldog case and system, due for Aussie release very soon, along with a bevy of fine Corsair gear to manhandle. Good stuff!

Upgrade Australia regulars Gigabyte Dino and Steelseries Tony pushed their tables together for a mighty confluence of spectacular gearage, with nice demos from each and a bit of quite serious pro-gaming action. Once again, the freebies flowed and glowy case mods shone brightly.

Racing sims were revving at max over at PLE, where one particular case mod blew everyone away. The whole thing is in a see-through desk. We marvelled, we wanted. They gave a fine racing seat away, too, for the fastest lap. Nice, guys, nice.

WD showed off a stupendous case mod with 48TB of storage in a wicked RAID 0 setup. So fine. Their In Win mod was another gobsmacker, so shiny, so bright.

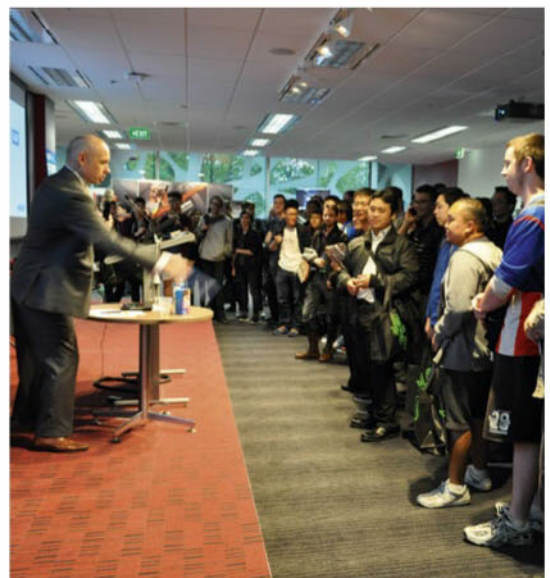
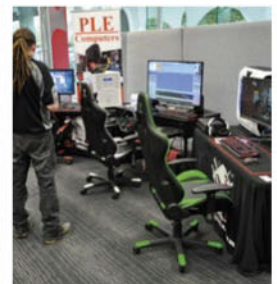
It was a treat to have Ashton Mills along from the Australian Computer Society. That man is a legend of the Aussie tech scene, and former Atomic editor. Ashton was on hand to explain just how the ACS contributes to IT education in Australia.

And through it all MC supremo David Hollingworth enraptured the crowd with endless freebies – some of which didn't hit anybody in the face – as they were flung lovingly into the sea of grateful gamers.

Thanks to everyone who came along. We hope you had a fab time. In fact, we know you did. That was evident. Thanks too, to the sponsors who worked so hard to plan, carry, setup and run some seriously impressive events. We will be doing this again, so stay tuned, when the next Upgrade Australia happens we'd love to see you there!

See more pics and the video online at www.pcauthority.com.au/upgradeaustralia





UPGRADE AUSTRALIA

Intel's Graham Tucker engages the PCPP audience

Already home to Australia's finest coffee, best small bar scene and the Australian Grand Prix, Melbourne's reputation as one of the world's most happening cities was further cemented with the recent Intel Upgrade Australia event. Held at Monash University with support from most of Australia's leading PC tech companies, the primary partner for this special PC&TA community event was none other than the CPU manufacturer who has been at the core of PC technology for over three decades; Intel.

The event hosted Intel's Graham Tucker, the local Aussie Technical Manager who has spent a hefty 28 years with the company. When it comes to Intel products, Mr Tucker is the man in the know. He imparted his wisdom on the crowd with a fascinating insight into Intel's latest products, highlighting how the latest Thunderbolt connection has the speed and power to host any type of peripheral, including external graphics processors. The crowd was lucky enough to see Intel's brand new NUC design (Skull Canyon), which has a totally redesigned chassis that incorporates a Thunderbolt 3 connection and a quad core Intel Core i7 processor with Iris graphics. It's perfect for road warriors who need a powerful system on the go, which can then be plugged into an external graphics processor to deliver rich gaming performance.

Tim: Moore's Law is dead. Now what?

Graham Tucker: Moore's Law is not dead. We're working on 10 nanometer. I've been at Intel a long time, we've had challenges in the

past and that's what happens when you're working on the cutting edge. You do run into the laws of physics. To get to the 14nm process, we needed to re-engineer the whole lithography process. We were getting to the point where the single wavelength of light wasn't creating transistors the way we wanted them.

In terms of materials – over the years we have done a lot of research into silicon alternatives. Silicon continues to be the foundation of our technologies. We are using some exotic materials like the introduction of hafnium high-k replacing silicon dioxide gate dielectric. There are other technologies that we're investing in, such as Quantum computing, which is a totally different philosophy in terms of the fact that standard logic doesn't work. Not all algorithms scale with quantum computing but there's a lot of stuff coming down the pipe relating to process technology.

Ashwin Nathan: I would like to ask Graham about the new Skylake processor and how its on-board video is going to support/handle next-gen games. Does a consumer have to buy a \$1,000+ video card for a decent gaming experience?

Graham Tucker: We have tested Iris Pro on a wide range of games. There are other gaming processor companies in the market, and Intel likes them. The likes of Nvidia are producing great graphics processors that have come down in power use while increasing in performance. But from an Intel perspective, we've really focused on

bringing graphics into the processor, taking performance per watt with graphics to a new level. So you can fit it into devices like the new Intel NUC – you can't do that with the traditional gaming processor package. So we have the graphics on the processor itself, with 72 execution units. So yeah, it is good enough.

Audience question: Do you envisage systems that use Thunderbolt 3 as the sole connection type? Power, display, everything?

Graham Tucker: USB 3 is the first step, where we have a single connector supporting all the protocols. If you look back to USB 1, everyone was speculating 1.1. It took two years for high-end devices to happen. But there has only been one manufacturer with Thunderbolt in the last year, but now we've opened it up to the PC market and the likes of Asus and Gigabyte, we'll see a proliferation of devices. As that happens, there will be less of a need to have the other interconnects available.

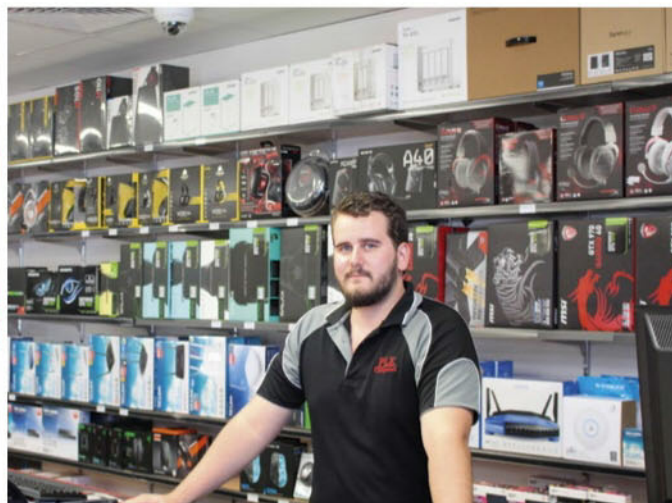
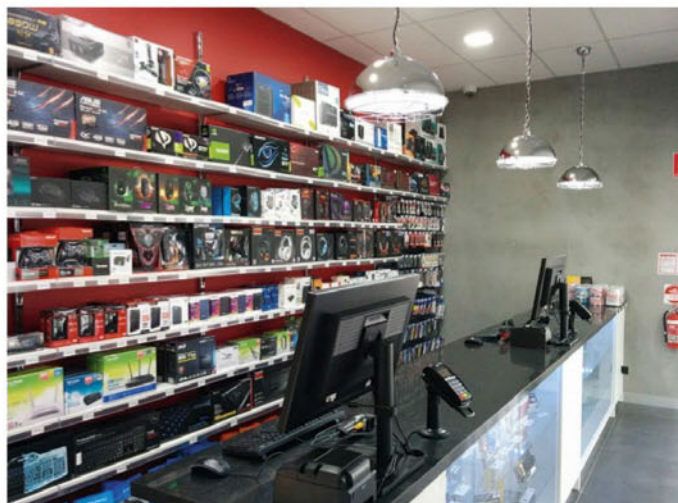
In mobile computing, we see with USB-C facilitating single wire docking and if you are a gamer, with Thunderbolt you can extend the PCI Express bus and have a high performance graphics engine externally. But we've also got to support legacy devices. The other thing about USB Type C, unlike USB, it delivers a lot of power-out. So we can power devices from the USB C ports and the computer itself can be charged via USB-C.

Dale Stohr: In 1993, Intel released its first commercial motherboard code-named Batman. In 2016, where is the 'Superman' motherboard?

Graham Tucker: We're very careful not to use names that conflict with anyone else's trademarks, and we protect our own trademarks. So from this point of view we tend to use codenames based on places in the natural world, such as mountains and rivers. It's unlikely that we'll ever see an Intel codename 'Superman'.

< Intel's Graham Tucker has been a star attraction for our Upgrade Australia events recently, and in Melbourne he shed some light on Intel's future activities and answered many audience questions





THE PLE ADVANTAGE

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For over 25 years PLE has been the go to PC store for West Australian consumers, and now they're located in Melbourne providing fast freight to the entire eastern side of Australia. They sell a huge range of products and have no hidden fees such as parcel protection, credit card or PayPal surcharges.

With four stores, over 50 friendly staff members and 25 years experience, this family owned business has definitely earned its reputation as one of Australia's top IT retailers.

CUSTOM BUILT COMPUTERS

Undoubtedly one of the most impressive aspects of PLE is their extensive range of Custom Built Computers. On their website you will find one of the most flexible Custom Build configurators around. You can either start with one of their recommended specifications or start from scratch. For each component you'll be provided with either a short list of popular selections or for the more advanced users you have virtually unlimited flexibility to tweak it to your liking.

Once you place your order a technician will go over everything and get in touch if there are any concerns and your system will be professionally built exactly to your

specification and stress tested prior to shipping. With Australia wide shipping it is good to know PLE provide advanced packaging to make sure everything arrives in one piece.

Their computers in the gorgeous Jonsbo cases (such as their limited edition 25th Anniversary System pictured to the right) really showcase the craftsmanship that exists in their Custom Built computers.

BATTLE BULL GAMING CHAIRS

One of the biggest new categories in the last 12 months in the PC industry is Gaming Chairs. PLE not only stock the usual

suspects like DXRacer but they also have Battle Bull. With premium quality components and high grade PU Leather these chairs are exceptionally comfortable to sit in. With two different sizes and a multitude of colours there really is a chair for everyone and starting at just \$299 with free delivery Australia Wide they're a great choice.

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STEELSERIES APEX M500

The SteelSeries Apex M500 is a tournament-grade backlit mechanical gaming keyboard built entirely around the needs of professional gamers. By combining Danish design with German engineered Cherry MX (Red) Mechanical switches, we have created the ultimate tool to maximise your in-game performance and ability to play at the highest levels. Features also include Blue LED Illumination, Full Anti-Ghosting with 104 Key Rollover and 100% programmability with SteelSeries Engine 4.

UPGRADE TO GIGABYTE

Performance
and quality



GIGABYTE Z170X-GAMING 7 MOTHERBOARD

If you are looking for the ultimate gaming motherboard, look no further than this Gigabyte Z170X-Gaming 7 motherboard. Voted by PC PowerPlay Magazine as the 'Motherboard of the Year', there is plenty of technology and innovation to back that up. The motherboard is an ATX board, with USB 3.1 and Type-C, DDR4 support, and M.2 storage. The board supports Intel's 6th-gen Core processors and it is Thunderbolt 3 certified! Networking is via a pair of Intel/Killer NICs, and there are six SATA 6GB/s connectors, and three SATA Express connectors for 16GB/s transfer rates.

You can run up to 3-way SLI/Crossfire, you can customise the LED lights on the board. Lastly and most importantly, the board is equipped with a Creative SoundCore 3D Gaming Audio Chip with Gigabyte AMP-UP Audio. Gamers and audiophiles are able to experience crisp and ultra-realistic audio for the richest sound experience.



GIGABYTE BRIX PCS

Challenging the essence of how we define a desktop PC, Gigabyte engineers have developed an ultra compact PC with a brushed aluminium surface chassis design. Ideal for a broad range of computing applications at home or in the office, the Brix expounds sheer simplicity and convenience. With a broad choice of processors covering the entire performance spectrum, the Brix sets a new standard for desktop miniaturisation that makes it perfect as a discreet HTPC/multimedia hub, an ultra-low power PC for the family, an office PC or as a digital signage unit.

The latest generation of Brix PCs are powered by Intel i3, i5 and i7 processors. The 6th Generation of Intel Core i7 processors are high-end desktop processors intended for those that need uncompromised performance. They have faster clock speeds than a Core i3 or i5, and a more powerful integrated GPU.

WD IS THE HIGH-PERFORMANCE UPGRADE

WD Red 8TB with HelioSeal helium-technology

When it comes to affordable, reliable and high performance hard drives for 1-8 Bay NAS systems, the WD Red is the optimal choice. WD Red were the first drives to market created specifically for NAS, designed from the ground up with 24/7 operation in mind. The latest innovation for the range is the new HelioSeal helium-technology which allows the drives to hit a whopping 8TB capacity. As 1080p video, 4K presentations and 360 degree VR movies become more prominent, the need for large amounts of storage are paramount.

Increasing to 8TB capacity is not only great for video-centric markets but is also a boon for home consumers as well. With the proliferation of mobile devices, more content is being created than ever before. The average home user may not necessarily have a dedicated NAS or even know what a NAS is. However, they can still take advantage

of the new WD Red 8TB as the drives can be also be found in the ever-expanding range of WD consumer devices as well. Currently, the My Book, My Book for Mac, My Book Duo, My Book Pro, My Cloud, My Cloud Mirror and My Cloud EX2 Ultra are all available with 8TB Red drives inside.

These solutions also provide Small Business owners with an uncomplicated introduction to NAS as an easy way to secure their sensitive data and simplify file sharing. Rather than relying on costly public cloud storage options, a product from the My Cloud range, combined with WD Red 8TB drives, offers a high capacity personal cloud with the same sharing capabilities but with local storage peace of mind.



WD Red drives are also renowned for reliability and performance with features like 3D Active Balance Plus, an enhanced balance control technology, which significantly improves the overall drive stability, vibration and heat. WD Red also uses innovative firmware technology called NASware which balances performance, reduces power consumption and minimises data corruption in the event of an unexpected power loss. When looking at high capacity drives for a NAS system, the WD Red 8TB can't be beaten.

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NOBLE SAVAGE

Insomniac sets out to rite some wrongs

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Insomniac Games, a studio best known for creating Playstation hits such as the Ratchet & Clank franchise and the Resistance series of shooters has jumped into the VR pool with both feet, developing a slew of new games due out for the Oculus Rift in 2016. In addition to Edge of Nowhere, a fascinating, and somewhat nerve-wracking looking Arctic survival game and the crazy looking first person, gesture based magic duelling game The Unspoken comes Feral Rites, a colourful third person action brawler that sounds part Altered Beast, part Zeno Clash.

Players take the role of the scion of a noble tribe, whose father, the Chief has been killed. Rescued from a similar fate, the child was raised in a faraway land, the now adult survivor travels back to the island of their birth, a deadly place fraught with danger and teeming with savage beasts to punch a trail of vengeance through all those that stand in the way of revenge. That revenge comes in the form of combo based brawling and the ability to transform into a number of

savage beasts to better slaughter enemies.

Both the nature of the action and exploration aspects of Feral Rites have apparently raised a number of hurdles for Insomniac Games. By opting for a third person camera, Insomniac have leapt some of those hurdles by giving players a sense of scale and range in the brawling combat, but a fixed third person camera proved to be unworkable as it didn't give the player enough spatial sense to fight large groups of enemies. The final game will have a dynamic camera that will change view distance depending on the situation, pulling further away when the player needs greater spatial awareness, such as when fighting enemies from all sides or exploring the lush jungles of the island, and closing in when a closer POV is necessary. The third person camera should also do away with much of the discomfort that could come from a fast paced action game in VR jerking the player's vision around erratically and violently.



Skullcrotch Vs The Boner!



■■ players will be able to choose the sex of their character, and, rather interestingly (or worryingly) each sex has different powers and abilities ■■



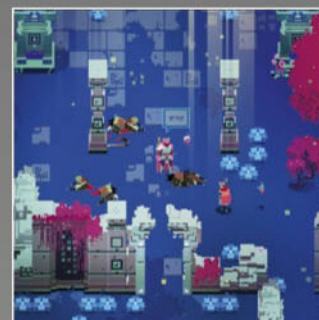
Though renowned for their excellent weapon design in previous franchises, Insomniac Games is taking a very different approach with *Feral Rites*. Aside from the ability to transform into animal forms there are no weapons in the game. Instead, players will be able to upgrade their armour as well as develop their character in as yet unspecified ways. At the time of character creation, players will be able to choose the sex of their character, and, rather interestingly (or worryingly) each sex has different powers and abilities. We're a little worried that this might mean that female characters will be the little, fast and stealthy fighters and male characters may be the brawny tanky type, essentially fixing the genders into stereotypes, but we'll leave our final opinion until the game comes out. We're also curious to see how control works as well, whether the game will be gamepad based with the player's head controlling the camera, or whether some form of gesture/motion control will be used. At any rate, we're definitely excited to see what Insomniac Games has in store for us when *Feral Rites* is released sometime around Christmas. **TAVISH FORREST PC**

A gritty reboot of Terrence and Philip?



Games

YOUR GUIDE TO PC GAMES



It would be hard to find a more eclectic group of games to review this month if we tried. In fact, I think if we did try, this would arguably be the group we came up with.

I mean, look at that list over there? A highly experimental AAA game that arguably bites off far more than it can chew; a trading RTS hybrid that spent what felt like an age in Early Access to polish its mechanics; and a game that puts you in the shoes of someone at ground zero of one of the Middle East's most defining moments of the 20th century.

Seriously - a game about Iran's 1979 revolution? That is pretty damn awesome, and real proof that gaming can be as much about teaching and empathy as it can be about explosions and frenetic fun.

Now, that said, if that is your thing, whoo-boy are you going to like Code of Princess - because it is pretty much explosions, frenetic fun, with a side does of crazy anime princesses.

Aw yeah.

David Hollingworth
Digital Editor

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SCORING SYSTEM | PCPP scores its games on a 1 to 10 scale. The higher, the better – though 10 is by no means a “perfect” game. We’re not convinced such a thing exists, so consider a 10 a masterpiece of PC gaming, despite its inevitable flaws. A 5 is a decidedly average game; one that doesn’t excel in any particular area, without being an affront to our senses – the ultimate in mediocrity. Below this, you’ll start to find the games our reviewers suffered an aneurysm getting through; above it, the titles truly worth your time and money. And remember: a score is only a vague indication of quality. Always read the full review for the definitive opinion!

WE
PLAY
ON:



ALIENWARE
GAME VICTORIOUS



SAMSUNG
950 PRO



Quantum Break

Quantum Broken

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AVAILABLE AT WINDOWS 10 STORE
www.quantumbreak.com

The Finnish developer, Remedy Entertainment has a long history of developing high quality PC games that not only investigate interesting new ways of telling stories but also contain innovative and engrossing gameplay mechanics. Although not the most prolific of developers, with only five PC games developed between the company being founded in 1996 and the release of Quantum Break. While the developer's first game, Death Rally, was well received, it is now mostly forgotten, but the following four games are all, Max Payne, Alan Wake and their sequels are all lauded as classics and make frequent appearances in best of lists. While the same could be said for Quantum Break on Xbox One, the shoddy nature of the PC port and the myriad problems with Microsoft's UWP (Universal Windows Platform) render Quantum Break on PC a fundamentally flawed and ultimately unsatisfying experience.

There is a good, perhaps even great game hiding under the poor porting, and a



fantastic, well presented story (if you can see it - more on that later). Players take the role of Jack Joyce, a man with a slightly shady past (early information shows that he has a criminal record and small arms training), a man brought home to the city of Riverport by his best friend Paul Serene. Despite the fact that Jack's meeting with Paul is set for 4:15am, Jack isn't suspicious of his friend's motives for flying him to a city he hasn't returned to for six years, so what comes next isn't that much of a surprise. Paul wants Jack's help to test a time machine that Serene and Jack's brother William have



developed. Things go wrong. Time breaks and starts to fracture, causing "stutters" and Jack himself is bombarded with Chronon particles, enabling him to manipulate time in small ways. Paul Serene is also bombarded and through some time hanky-panky that is slowly revealed through the 10 or so hour campaign, becomes the villain, a fact that will come as no surprise considering the character is voiced, mocapped and modelled on Aidan Gillen (Petyr Baelish/Littlefinger from Game of Thrones).

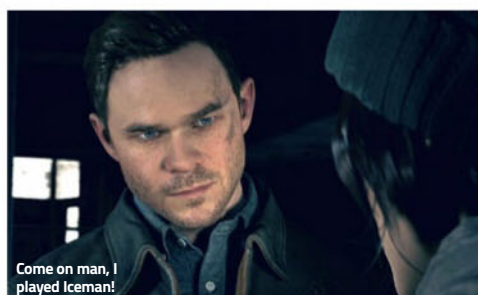
The action that follows the impressive opening can best be described as a cover



based shooter crossed with a Choose Your Own Adventure book, with players alternating between Jack Joyce and Paul Serene during the story chapters and then seeing how decisions made during gameplay pan out in 22 minute live action TV episodes that stream between the chapters. It's an intriguing format. The lengthy Jack Joyce levels feature some tense shooting, with the hero having to use his time based powers - creating a shield, freezing an area or enemy for a short while, dodging (and launching into Bullet-Time style attacks) and seeing the past - to fight off the forces of the nefarious Monarch Corporation and learn the truth of what has happened with the time machine, why Paul has become the bad guy and how to stop time from shattering altogether. Paul Serene levels are much shorter and revolve around making game changing decisions rather than shooting faceless private army goons to death. The conceit for Serene's big decisions is a clever one and adds some weight to what would otherwise be some pretty binary choices. Paul's time powers are more advanced than Jack's, enabling him to see the general result of decisions before committing to a choice. Once the choice has been made, players can then watch what amounts to an episode of live action TV that details how choices made in the chapter pan out. Due to the number of variables, these episodes stream from a central server rather than reside on the HDD. There are reportedly over 70Gb of video files.

It's an interesting and mostly successful approach to storytelling that certainly fits comfortably in the Remedy wheelhouse, but the videos break up the flow of action a little too much to make them fully satisfying, and skipping them to keep the momentum flowing makes the game feel disjointed.

Matters of pacing aside, the fundamentals of the game are solid, but everything is ruined by the



■ No matter how powerful your machine, Quantum Break shows erratic frame pacing ■

WHY SHOULD I CARE?

+ You like your entertainment jittery

+ You don't want to put any pressure on your second videocard

+ You don't want to have to deal with too many configuration options

+ You think Aidan Gillen has a really trustworthy face

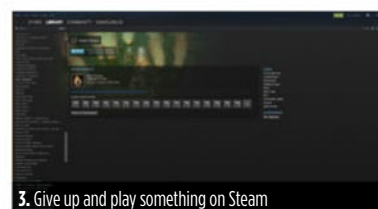
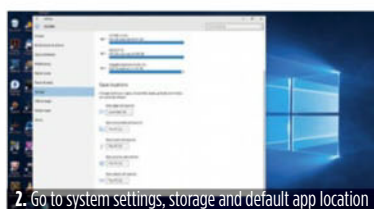
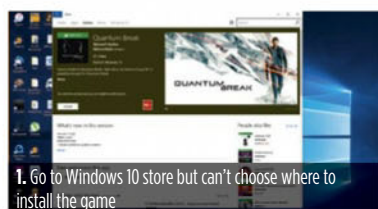
shoddy porting and presentation. No matter how powerful your machine, Quantum Break shows erratic frame pacing. What this means is that the timing between frames is not in the least bit stable so no matter if you have the game rate running at 100 frames a second or have it frame locked to 30, the animation stutters and looks janky. The game is a resource hog, so only the most powerful POCs can run it at high settings and get a consistently playable framerate. This is partially due to the way the game is rendered and partially due to the fact that it can fill up and fragment video memory. Rather than simply outputting the game at the resolution

shown, Quantum Break instead renders each image as it would on the Xbox One, rendering the final image from four buffers rendered with 4xMSAA at two thirds of screen resolution. A 1080p image, for example, is rendered from four 720p buffers. While this should technically make the game easier on PC resources it appears to have the exact opposite effect, leading to significant slowdown during some scenes.

Many of the fundamental graphics problems with Quantum Break could be fairly easily fixed if it weren't for the fact that Windows 10 Store games function as apps, meaning that even when displaying in what appears to be full screen, they are actually run

SEQUENCE

DOWNLOAD BOSS FIGHT





BREAKING POINT

1. Jack is surprisingly good with small arms and has no compunctions about killing
2. Most enemies are faceless
3. Some barrels explode
4. This is not rendered in your native res
5. All this is running with an erratic framerate
6. Apparently many of the most fundamental problems with Quantum Break have been fixed by a recent 27GB patch. Let that sink in for a sec. The patch to make the game playable on PC is bigger than most game downloads.

in a borderless windowed mode. This means that anything the runs behind the program or as an overlay has no effect. As such, the variable controls and minute adjustments that can be made using the Nvidia Experience interface or Radeon Crimson have no effect on the running of the game. As it stands, Quantum Break doesn't support Crossfire or SLI, so end users with dual graphics cards get no extra oomph from their machines.

Even without the ability to tweak graphics settings, testing done by a number of outlets has shown that Radeon cards show markedly better performance than similarly specced Nvidia cards. As good as that sounds, it's not cause to celebrate for Radeon

owners, as there are a number of problems that are unique to Radeon users. There seems to be a problem common to many R300 range cards that means that causes anti-aliasing to cause to screen to be covered in black bars and heavy pixel snow, making the game unplayable. Turning off anti-aliasing fixes the problem but makes the game look much worse and really highlights how janky the erratic framerate really is. During testing we also had problems with the streaming episodes while using an R9 390, with the image being obliterated by bands of colour that resemble test patterns from the days TV stations used to close for the night.

As something of a defacto flagship title for UWP and the Windows 10

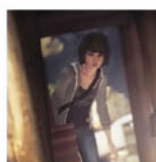
store, Quantum Break needed to be a knockout hit, lauding the new platform and distribution method to PC gamers everywhere. This is definitely not the case. If anything, Quantum Break simply highlights the flaws of UWP and the idea of cross platform development. What works on Xbox One isn't working on PC, because the game has not in any way been optimised for PC, and the Windows 10 store and treating games as apps does nothing but treat PCs as consoles, taking away one of the fundamental features, and joys, of being a PC games - the ability to tweak performance and settings until things are just how you want them.

DANIEL WILKS **PC**

OR TRY THIS:



MAX PAYNE 2
REMEDY
ENTERTAINMENT, 2003
▲ Great story well told
▼ No time travel



LIFE IS STRANGE
DONTNOD
ENTERTAINMENT, 2015
▲ Excellent time travel decisions
▼ Acoustic hipster soundtrack



PRINCE OF PERSIA: THE SANDS OF TIME
UBISOFT MONTREAL, 2003
▲ Turn back time to avoid death
▼ Warrior Within was awful

VERDICT:

Quantum Break is a great game on Xbone, but shoddy PC optimisation and the issues associated with the Win 10 store fundamentally break the game.

5

Offworld Trading Company

At last an RTS with no combat at all! Except for the dynamite, armed mobs, and underground nukes

DEVELOPER MOHAWK GAMES
PUBLISHER STARDOCK ENTERTAINMENT
PRICE \$39.99
AVAILABLE AT STEAM
www.offworldgame.com

As my rival's buildings burned in the aftermath of another successful dynamite attack, and as space pirates shot his transports out of the sky, and as I readied an underground nuclear detonation, I reflected how refreshing it was to play an RTS without any combat.

Because, see, all these things are just perks you buy from the Black Market rather than being core to the experience of Offworld Trading Company. And anyway, the AI will use them on YOU. So it's fair.

OTC is an RTS that doesn't PRESCRIBE familiar gameplay, geddit? Because OTC also stands for Over The... Phew. Tough crowd. Anyway, it's ostensibly a conflict of economics and business acumen, while at the same time NOT being a super-dry business SIM.

Quick precis? Ugh, okay: Earth dying, Mars ripe for exploitation, arrive, set up colonies, step three, profit! In a bold move, developer Mohawk doesn't have the player take the role of a fledgling colony. Rather, the Companies which do their Trading Offworld, are sort of parasitic opportunists - the new colony needs food, fuel, entertainment, volatile chemicals, and rather than get these things for itself, for some reason it instead buys them off half a dozen or so companies all competing on the same map.

Yeah, the setup is more board game than internally self-consistent virtual world. Each company has an HQ and builds its structures on a hex-based map. The number of structures is restricted not just by available resources, but also by "claim rights"



Earth dying, Mars ripe for exploitation, arrive, set up colonies, step three, profit!

WHY SHOULD I CARE?

+ You hate getting spammed because of your low APM

+ When confronted, your first response is to sue

+ You love the smell of inevitable bankruptcy in the morning

+ It's not personal, it's just business

- each time the HQ is upgraded, you get an additional five claims, and can only build five more structures (plus the odd claim here and there on the Black Market). Will you invest in mines, in processing plants, or something more exotic like a Pleasure Dome to entertain the colonists? Perhaps even an Offworld Market that will allow the base to launch resources to the Asteroid Belt and ensure the title of the game actually makes sense.

What doesn't make sense is why a trading company that is prepared to clandestinely nuke resource sites to deny rivals access to raw materials would ALSO respect some kind of colonial building code by not putting

up too many pre-fab greenhouses. Still, whatever.

This weird system works though, because unlike every other RTS ever, there's no area control in OTC. You can build a structure anywhere, on any tile on the map. The whole map is revealed (after a weird scanning minigame at the start of each skirmish) and if you spot, say, a geothermal vent, you can slam down a power plant even if it's right next to an opponent's base.

It's even possible to "claim" a tile before building on it, denying the opponent access while you save up Steel or Silicon.

Right about here is where the Black Market comes into it. Functionally,

SEQUENCE

CLICK TO PROFIT





CAPITALISM 101

1. A giant mess of jumbled structures? Nay nay: the HQ is the hub of the company base
2. This column shows the prices of each commodity and the company's cash situation.
3. There are five special structures that earn extra cash
4. The Black Market lets you deploy various "no direct conflict" abilities
5. Two Offworld launchers are set to automatically send steel and oxygen to the Asteroid Belt
6. Due to our opponent's pathetic stock price, we can now buy them out with a single click

it's like the "midi-weapons" of C&C Generals. Choose from one of several effects, pay a price, and unleash moderate inconvenience. There's stuff like EMPs (shut down buildings), Worker Mutinies (get control of an opponent's structure for a limited time) and the aforementioned Pirates, Dynamite, and Underground Nuke (which actually destroys resources, not structures).

Meanwhile, each Trading Company is producing food, fuel, iron, aluminium, carbon, silicon, power, chemicals and electronics which it either stockpiles or sells to the colony.

Again unlike other RTS where having zero space-credits means a freeze on unit production, in OTC it's possible to go into debt (needing to purchase electricity at night seems a common source of red ink) and keep on rockin'.

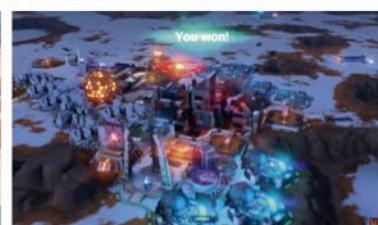
The whole left of the screen is taken up with a list of resources, each showing its market value. You can sell stockpiled resources with the click of a mouse but the more you sell the lower the price gets. Or you can buy them to quickly gain the materials for a new structure or an HQ upgrade.



There are no units. Transports flit about the place, but they're just window dressing. The Pirates are the only thing that can interact with the transports (by shooting them down), and the player can't interact with the Pirates.

Anyway. What's not immediately obvious in this game of no direct conflict is how to, you know, win. It's simple. Victory comes to whichever Trading Company buys a majority share in all the others.

So really this isn't an RTS at all. It's a kind of puzzle game where you anticipate what your opponent is likely to do and attempt to make smart decisions about exactly WHEN to do the next thing in a fairly rigidly defined sequence. When should you buy shares in his company? Early game when the stock price is low, but leaving you short on cash? Or in the endgame, when you'll have a huge



pile of money, but your opponent will have a controlling interest in their own company, so you'll have to spend double the stock price in a "hostile takeover"?

Look, OTC is a bit of fun, and it's different, but you know what? This could be an app. It really could. A tappy-tap game, I mean. Some reviewers have gone NUTS with praise for OTC, but for a PC game it straight up lacks depth. There are different factions with slightly different flavours, but without the clash of armies, this game is all about second-guessing an opponent and not over-spending on spacefarms.

You'll feel smart the first time you figure out how the game works. After that though, you'll probably start pining for a Mammoth Tank and a couple of Zealots. **ANTHONY FORDHAM**

OR TRY THIS:



OUTPOST SIERRA, 1994

- ▲ First hard SF base management sim
- ▼ First game released unfinished



SID MEIER'S ALPHA CENTAURI FIRAXIS, 1999

- ▲ Civilization in space!
- ▼ You WILL get the space worms



CAPITALISM II ENLIGHT, 2001

- ▲ Proper economic sim with depth
- ▼ Depth means you will drown in graphs

VERDICT:

Investing in this quirky take on RTS risks a return of buyer's remorse

6

1979 Revolution: Black Friday

Prelude to a massacre

DEVELOPER INK STORIES
PUBLISHER INK STORIES
PRICE \$11.99
AVAILABLE AT STEAM
Inkstories.com/1979RevolutionGame

Set in the days before the infamous Black Friday massacre in which unarmed protestors were fired upon by the Iranian army, 1979 Revolution casts players in the role of Reza Shirazi, a London educated photographer who returns to Iran to both fight for freedom from the Pro-American puppet Shah, Mohammad Reza Shah Pahlavi and document the struggle as a photojournalist. It's not a part of history that is particularly well known in the Western world, even though the aftermath - the autocratic rule of the Ayatollah Khomeini - is quite common knowledge. Reza is a very likeable and relatable character, a pacifist with a deep love for his homeland and his people and a belief that Iran becoming an independent state ruled by an Iranian rather than an American vassal ruled by a puppet. He's charming, if a little naive, and extremely well voiced. Even in the short two or so hour running time of the game, Reza proves to be a relatable and realistic guide, a fully fleshed out person through whose eyes we see the tragic events unfolding.

Having the main character be a photographer is a very clever conceit for forcing players to focus on both the minutia and the bigger picture of the revolution. Early in the game, Babak first introduces Reza to the size and scope of the revolution from a rooftop overlooking Jalen Square. Protesters from all factions fill the square and Reza, as a photojournalist is compelled to start taking shots. The camera interface is simple showing two laterally moving halves of a viewfinder. These halves light up green when something of interest is being looked at and snaps can be taken when the two halves of the rapidly



action revolves around conversation and making decisions that will impact later events in the game

WHY SHOULD I CARE?

+ You always liked History when you were at school

+ You like Telltale games but are sick of zombies

+ You don't buy into the whole goodies/baddies Axis of Evil thing

moving viewfinder line up. A successful picture rewards the player with a snap as well as a summary of the group, action or thing being photographed. Not all of the points of interest are immediately apparent, forcing the player to scour the scene, taking in everything to find those last few pictures. Shortly afterwards Reza walks down a street taking photographs of beggars, hawkers, preachers and passers-by, each photograph adding a little more flavour and information the unfolding events.

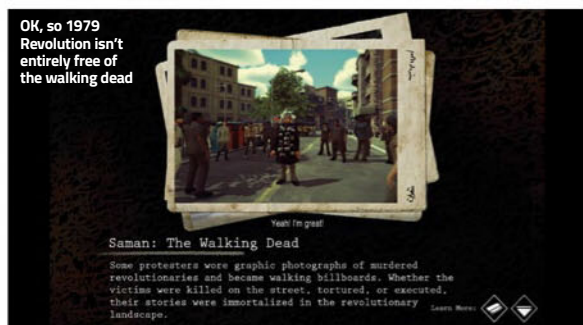
Not all of the action revolves around taking photographs. Much like the Telltale adventure games such as The Walking Dead, Tales from the Borderlands and The Wolf Among Us with which 1979 Revolution shares a

great deal of mechanical DNA, much of the action revolves around conversation and making decisions that will impact later events in the game. Each conversation gives Reza four options for response with a time limit but remaining silent is always an option. The very first scene, in which Reza tries to escape from and is then interrogated by the SAVAK, the Shah's notoriously violent and oppressive secret police. Reza has options for sass and submission but can also keep his mouth shut. Each option has its own drawbacks and impacts the way he is treated. It's a terrifying situation and drags players right into the dangers of revolution before dropping them back into the sedate but no less dangerous events leading up to Reza's capture.

SEQUENCE

ONE THOUSAND WORDS





TIMELY ANSWERS

1. The black background to responses represents the amount of time you have left to choose
2. Do you meekly call your interrogator and torturer by his full name?
3. Do you defiantly ignore authority?
4. Do you call him Asshole Lajevardi and make an already violent man worse but perhaps anger him to the point that he'll make mistakes?
5. Do you stay quiet?
6. You'll still probably be tortured

There are a few quick-time, button matching action events spread throughout the game, starting with Reza's attempt to flee SAVAK, but for the most part the action is more cerebral than physical, trying to make the right decisions and conversational gambits. Do you physically attack a communist agitator harassing Babak or do you take the pacifist approach? Do you assault soldiers arresting your best friend or do you try and take the non-violent path? Do you hide the fact that your brother is a member of SAVAK or do you admit that you are related to a potential torturer? These are the type of decisions that have to be made on a regular basis.

Unfortunately the brevity of 1979 Revolution: Black Friday means that

many of these decisions don't feel quite as consequential as they should and a number of these plot threads are left too open to be satisfying. This could be because the game ends on quite the cliff-hanger pointing to the fact that iNK Stories is most likely planning a follow-up game detailing the events after Black Friday, but given the fact that 1979 Revolution failed to meet its Kickstarter goal when it was first announced in 2013, a sequel or follow-up may be a long time coming if not a pipe dream. The result is that the game doesn't feel quite as finished or polished as the excellent visuals or voice acting may otherwise imply.

Educational games, and passion projects for that matter, don't have the

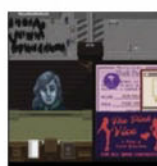
best reputation, with the former often being too didactic to be entertaining or too trite to be fun, and the latter because the idea is often too grand for execution or the material is too personal to be accessible to players. In the case of 1979 Revolution, the fact that history is revealed in such a relatable way and Navid Khonsari has such a passion for the subject matter that makes it such a wonderful experience. It may be short and end on a slightly unsatisfying note, but the depth of feeling shown for the subject and the gentle, humane way in which what is ultimately a depressing history lesson is delivered make 1979 Revolution: Black Friday an enjoyable and deeply memorable experience.

DANIEL WILKS **PC**

OR TRY THIS:



THE LAST EXPRESS
SMOKING CAR PRODUCTIONS, 1997/2013
▲ The eve of WWI in condensed form
▼ Real time



PAPERS, PLEASE
LUCAS POPE, 2013
▲ Join the totalitarian state
▼ Join the totalitarian state



HER STORY
SAM BARLOW, 2015
▲ Ambiguity reigns supreme
▼ Did you get it right?

VERDICT:

A little too abrupt to be entirely satisfying, 1979 Revolution is still a powerful and memorable slice of history.

8

Aurion: Legacy of the Kori-Odan

Cameroon takes the stage

DEVELOPER KIRO'O GAMES
PUBLISHER PLUG IN DIGITAL
PRICE \$19.99
AVAILABLE AT STEAM
aurionthegame.com

Full disclosure - I backed the Aurion Kickstarter campaign, just as I have backed 50 or so other games. I back game for a variety of reasons, from liking the team behind the game, to being impressed by the pitch, to simple curiosity. In the case of Aurion, it was because I wanted to see what a fantasy RPG created by Cameroon's first game development studio and based around African mythology. The end product is just as I suspected it would be, an overly, somewhat naively ambitious action RPG with some fascinating lore and a number of teething problems you would expect from a fledgling developer in a country with no games development experience or infrastructure.

Aurion follows the saga of Enzo future king of Zama. On the day of his wedding to future queen Erine, not only is Zama attacked by a rival tribe, there is also a coup, forcing Enzo and Erine to flee. What follows is essentially the story of Enzo and Erine's relationship, and the adventure of a brave but rather brash king in waiting learning what it means to be a ruler from the people of the lands outside of Zama. It's an interesting story and well-handled for the most part, but the sheer amount of exposition can become something of a drag. So too are the numerous typos that litter the text. The presentation of the game is much more polished than the script. Although the character models and animations are fairly simple, the African roots of the game shine through. It's bright and colourful (even during the few times that the predominant colour scheme is brown) and backed by a mix of traditional music and some more contemporary African fare. It's by no



It's bright and colourful (even during the few times that the predominant colour scheme is brown)

WHY SHOULD I CARE?

+ You want to hear stories from a new perspective

+ You like killing the same enemies over and over again

+ You want every continent to make games

means the best looking game on the market but it is lovely.

Things come somewhat undone when it comes to the scope of the action in the game. There is side scrolling combat, exploration, puzzle solving and platforming, but none of the elements feel fully fleshed out. Exploration feels best, with a satisfying mix of 2D and 2.5D maps and numerous Caloos (treasure chests) to find. The puzzle solving is OK but never feels particularly enjoyable and the less said about the platforming the better. Although it is possible to avoid combat for the most part, battles are probably be where most players will be spending the bulk of time.

The combat system is a fairly straightforward with simple attack

combos and special attacks, and dashes/dodges to get out of the way of the enemy and keep the combo meter going up. Depth is added to this basic fighting setup by the various Aurions that Enzo can discover throughout the game. These ancestral powers change the available moves, damage and elemental effects of attacks. Erine can also be called upon for backup during combat to heal or attack enemies, but bringing her into battle exposes her to danger. It's a clever and enjoyable system but there is far too much for it to feel satisfying in the long run. There are a lot of good ideas in Aurion but they either outstay their welcome like the combat or aren't fully fleshed out enough to last the distance. **DANIEL WILKS**

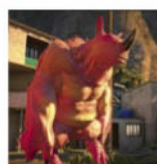
OR TRY THIS:



NEVER ALONE
UPPER ONE GAMES, 2014
▲ Inuit stories
▼ Glitchy



BOMA NARAKA
SURA
ANANTARUPA STUDIOS, TBA
▲ Indonesian mythology ARPG
▼ Not out yet



PAP0 & YO
MINORITY MEDIA INC, 2013
▲ Favela magic realism
▼ Glitchy

VERDICT:

A little too ambitious for its own good, Aurion still shows serious promise for Cameroonian game development

6

Code of Princess

It costs a lot of money to wear so few clothes

DEVELOPER STUDIO SAIZENSEN
PUBLISHER DEGICA
PRICE \$14.99
AVAILABLE AT STEAM
saizensen.degicagames.com/

The system setting and control screens of Code of Princess do not do it any favours. There aren't a lot of options when it comes to PC optimisation, but far worse is the fact that the control screen shows a picture of a Nintendo DS for button layout. It has to be one of the laziest ports we've ever seen when it comes to the interface, making all the Xbox ports that have a large "Press Start" or "Press A" prompt look positively bespoke. Don't let the extremely lazy port put you off though, as Code of Princess quickly shows itself to be a fun and charming beat 'em up/RPG hybrid that is full of actually funny jokes.

The story is more than a little trite. The Kingdom of Deluxia is in disarray after the King surrenders the land to monsters and an evil queen who looks like a sleepy high schooler with a severe crush on a stuffed rabbit. Princess Solange of Deluxia takes the magical sword of the kingdom, an enormous zweihander named Deluxcalibur and flees the Kingdom, determined to overthrow the evil usurpers and defend the people from the invading monsters. The armoured bikini wearing Solange is joined on her adventure by Ali-Baba, a rogue in a padlocked halter top, Zozo, a decaying necromancer who keeps replacing parts of her body with those culled from corpses, and Allegro, an electric guitar playing bard that claims he will be a great sage with a few more experience points.

Although there are a levelling mechanic, experience points and equippable items in Code of Princess, it is first and foremost a side scrolling beat 'em up rather than a more traditional JRPG. Each of the four characters has



far worse is the fact that the control screen shows a picture of a Nintendo DS for button layout

WHY SHOULD I CARE?

+ You want to know why heroines wear so little

+ You want to see sprite boob jiggle

+ You have a juvenile sense of humour

a unique fighting style and special abilities. Solange wields her massive, heavily damaging but slow blade, Ali is fast and uses her small sword and bombs, Zozo wields ranges magic, and Allegro uses his guitar for a mix of melee and ranged attacks. The combat system is simple but quite robust, utilising a mix of combos and timing to string attacks together. Each fighter has a normal and heavy attack, a Target attack and a Burst attack. The normal and heavy attacks are just what you would expect, the Burst attack slowly drains the character's MP (magic points) and allows them to do more damage, and the Target attack targets a single enemy making them take twice as much damage from player attacks and makes them the target for all

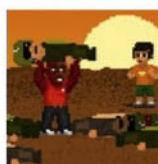
special moves, no matter where they are on the screen. All attacks, including the quarter circle and other Street Fighter style special attacks can be comboed together with the right timing.

The large sprites, rendered from 3D models are beautifully animated, but once again show the laziness of the port. There sprites seem to be the same resolution as those from the 3DS, making them look extremely pixelated on PC monitors. It's also a very short game, with the main story only taking 3-4 hours to complete. The multiplayer modes don't really make up for the brevity either. Still, if you're looking for a little irreverent fun with some good brawling, you could do a lot worse than Code of Princess. **TAVISH FORREST**

OR TRY THIS:



SHANK 2
KLEI ENTERTAINMENT, 2012
▲ Hilarious slaughter
▼ No armour bikinis



FIST PUNCHER
TEAMZBIT, 2013
▲ Fist punching
▼ No necromancers



KUNG FURY: STREET RAGE
HELLO THERE AB, 2015
▲ Triceracop!
▼ Kung Fuhrer!

VERDICT:

Fun combat and a genuinely funny script rescue this incredibly lazy port.

7

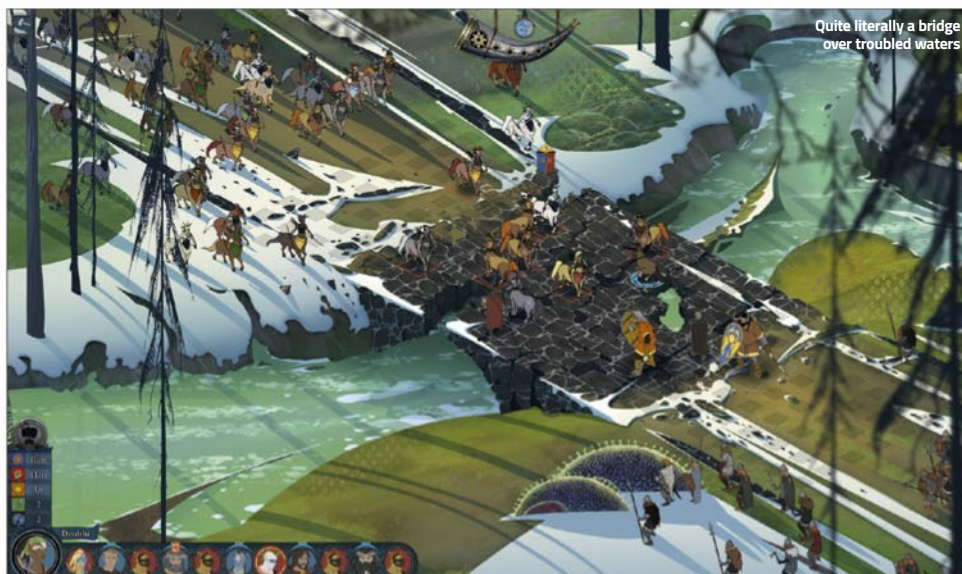
The Banner Saga 2

The saga continues and the battles improve

DEVELOPER STOIC STUDIO
PUBLISHER VERSUS EVIL
PRICE \$19.99
AVAILABLE AT STEAM, GOG
www.bannersaga2.com

Don't let the name fool you. The Banner Saga 2 isn't a sequel to Stoic's beautiful Norse fantasy tactics game, but rather a continuation thereof. It's part 2 of the epic saga of a land in which the gods have died, the sun has stopped, and everything living is on the run from the terrifying Dredge. Set right after the events of the first game, the player finds themselves once again in charge of a small caravan, pressing through the ice and snow trying to make it to the human capital and supposed safety. Even though the game is a continuation rather than a sequel, aside from the fact that players can bring their characters over from the first game with experience intact, there's no reason not to start the Viking adventure in the middle. The Banner Saga 2 starts with an excellent catch-up video to get players up to speed with the story, and underneath the hood many of the mechanics have been improved or redesigned, making Banner Saga 2 both richer and more enjoyable than the already excellent first chapter.

The story suffers a little from middle trilogy syndrome, explaining things from the first game and setting things up for the planned third and final instalment, but there's more than enough in the main story to hook players. Just in case you're not fully engaged, there is a second caravan story in the game as well, following the berserker and sellsword from the original game. It adds a brutal overtone to what is already a rather melancholy experience. The action of the game is split between Telltale by way of Oregon Trail decision making and turn based combat.



Quite literally a bridge over troubled waters

It adds a brutal overtone to what is already a rather melancholy experience

WHY SHOULD I CARE?

+ You really want to save your people

+ You believe in the power of beard

+ You love the idea of Ralph Bakshi's Oregon Trail

While the route and destination of the caravan are predetermined, the choices the player has to make along the way can drastically alter the way the game plays out. New heroes can be recruited, bad decisions can kill characters, not having enough supplies can seriously affect the morale of the caravan and so on. Each decision made has a palpable effect on gameplay, whether it be something as simple of gaining some new supplies to stave off the long winter hunger through to having one of your levelled and important characters die due to bad management. The single save slot makes these decision even more important, as unless you want to lose progress there are no do-overs.

Combat has been significantly improved with the addition of new troop type to fight with or against, necessitating new tactical approaches, and battle specific win conditions. Rather than completing a battle by simply killing all the enemies in an area, battles in Banner Saga 2 may require fighters to defend an area for as long as it takes to clear a snow drift, kill a single important enemy or any number of other win scenarios. This simple change adds some extra spice to the otherwise already solid combat. A new tutorial and hero training mode also gives players a chance to really come to grips with how to use all the fighters to their greatest effect.

TAVISH FORREST **PC**

OR TRY THIS:



THE BANNER SAGA STOIC STUDIO, 2014

- ▲ Level your heroes
- ▼ Kill everything always



KING OF DRAGON PASS A SHARP, LLC, 2015

- ▲ Norse clan survival
- ▼ No amazing art



ORGAN TRAIL: DIRECTOR'S CUT THE MEN WHO WEAR MANY HATS, 2013

- ▲ Station wagon survival
- ▼ Dysentery

VERDICT:

Although the story is a definite middle section, the strategy and stakes of Banner Saga 2 are greatly improved.

9

Hyper Light Drifter

Survive the pixel apocalypse

DEVELOPER HEART MACHINE
PUBLISHER HEART MACHINE
PRICE \$19.99
AVAILABLE AT STEAM, GOG
www.heart-machine.com

Hyper Light Drifter has one of the most coherent art designs we've seen in a game. It may sound like an odd claim, but think about it. Most games have different aesthetics for different locations that tie together in the general theme but use different palettes and forms. Drifter maintains the slightly dreamy mix of 70's style prog rock album art and pixel graphics throughout, developing a huge, cohesive world that sucks the player in and keeps them trapped there with the amazing electronic soundtrack. It really is a thing of beauty that tells the story as much as does the actual plot.

It's hard to describe the story as much of it is told only through imagery or the environment, aside from saying it's sad, beautiful and a little ambiguous. On console Hyper Light Drifter would be described as a Metroidvania style game, and even though there are few direct analogues in the PC realm the description works. Players explore the vast lands of the game finding secrets, solving puzzles, fighting monsters and gaining new skills that can then be used to access previously inaccessible areas or solve previously unsolvable puzzles.

Combat feels like a distillation of old school action games, with the Drifter capable of a quick melee sword slash, shooting enemies at range and quickly dashing to get out of the way of attacks. By defeating enemies and scouring the worlds, the player can find currency that can then be used to alter these basic skills. The implementation of new skills is very clever, as they don't require the player to learn new abilities but rather adjust for the way that an upgrade has effected an existing ability. The sword,



It's hard to describe the story as much of it is told only through imagery or the environment

WHY SHOULD I CARE?

- + You prefer to discover a story rather than be told it
- + You always wanted Dark Souls to be 2D
- + You want a PC Metroidvania

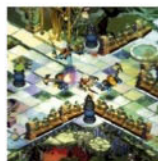
for example can be upgraded to be able to deflect and redirect enemy projectiles, turning the melee weapon into both a defensive and ranged weapon. The dash can be upgraded to string together infinite dashes seamlessly as long as you keep the timing right and don't run into an obstacle.

If there's any problem with Hyper Light Drifter it's that the game's difficulty isn't quite calibrated right. The game is hard and unforgiving. That's a good, if not great thing for the most part, as it encourages players to utilise all of the skills they have accrued and play carefully rather than fast. Unfortunately, there are some areas that show that this difficulty is tuned unfairly. Nearly every combat will see

the player outnumbered which is not a problem in and of itself, but some of these battles come down to luck more than skill. Likewise, autosaves snapshot the character at the time of the save. Entering a boss battle on half life with no health potions is tantamount to recursive suicide, as if you lose you be resurrected outside the battle with half health and no potions. The only option left to the player is running through the dungeon again and hoping they don't get unlucky with enemies or item drops.

Despite the uneven fairness of the game, Hyper Light Drifter remains an excellent example of indie creativity. You might not understand the story, but you'll have a hell of a time trying to work it out. **DANIEL WILKS PC**

OR TRY THIS:



BASTION
SUPERGIANT GAMES, 2011
▲ Simply amazing
▼ Fairly easy



ENTER THE GUNGEON
DODGE ROLL, 2016
▲ Bullet Hell dungeoneering
▼ No story



NUCLEAR THRONE
VLAMBEER, 2015
▲ Randomly generated levels
▼ Randomly generated levels

VERDICT:

The mechanics aren't always calibrated to work seamlessly with the difficulty, but even so, HLD is a stunning indie masterpiece

9

DVD Contents

RELIGIOSITY?

Just to clear things up, none of us here at the PCPP bunker are religious. Why then do we have Jesus Christ RPG on the disk? Well, let's just say that the game doesn't exactly follow the Bible but instead treads its own strangely funny path. Judas' character class is Traitor. That should give you an idea of what to expect. Enjoy the disk, and, as always, if you have any suggestions of what you'd like to see on an upcoming disk, jump on the forums at pcpowerplay.com.au and we'll see what we can do.

Enjoy.

The PCPP Team.

28 FREE GAMES AND GAME DEMOS!

- The Slaughter: Act One Demo
- Zombasite Demo
- Anna's Quest
- Antenna
- Black Rose
- Fishing Planet
- Jesus Christ RPG Trilogy
- Lost Girl's [Diary]
- Lost Lands: Mahjong
- MachineCraft
- Steno Arcade
- The Cubicle.
- A-Train 9 V4.0: Japan Rail Simulator Demo
- Defend your Crypt Demo
- Factorio Demo
- Flat Kingdom Demo
- Guns of Infinity Demo



- Lost Lands: The Golden Curse Demo
- Odd||Even Demo
- Quest of Souls Demo
- Sabres of Infinity Demo
- The Grandfather Demo
- The Hero Project: Redemption Season Demo
- Trial by Viking Demo
- WolfQuest Demo
- Origin of Destiny
- Surgeon Simulator VR: Meet the Medic
- Take the Dream IX

Anna's Quest



Installation instructions included on the disc. Browse the disc and launch **index.html** for more.

USING THE DVDS

PC PowerPlay DVDs are suitable for use in almost any computer but the software contained on the medium is for Windows operating systems only. Because each PC is different, PC PowerPlay and Next Media cannot guarantee the DVDs will operate as expected on every system, despite strict adherence to Windows compatibility.

LOADING

The DVDs are set to autostart. On insertion it will load the DVD's Terms and Conditions of Use disclaimer in your default Web browser. If the DVD failed to autostart, you can load the menu manually by running the file called start.htm in the root directory using Windows Explorer.

VIRUSES

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INSTALLING SOFTWARE

Simply click the install/download link under a file's description to launch the installation program. Please ensure that all other programs are closed and that any anti-virus software is disabled before performing a software installation. Due to STEAM region locking, not all content may be available outside Australia.

TECHNICAL SUPPORT

PC PowerPlay assumes the end-user of these DVDs has the necessary computer knowledge required to operate and install software from this product, and cannot provide technical support either for this or for any of the software contained on this disc.

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PC PowerPlay can only replace DVDs that were damaged or faulty at the time of purchase. If you think a DVD fits into one of these categories then please contact the DVD Producer immediately to assess whether a replacement needs to be sent out. email: jgillooly@nextmedia.com.au

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HYPER



WARGAMING

★ CONQUERING THE WORLD, ONE GAME AT A TIME ★

nextmedia



62
ISSUE 262
\$5.95 | 9771320745018

WHAT IS IT GOOD FOR?

There are some good reasons we're obsessed with conflict.

CONSOLE WAR DIARIES

One survivor remembers the horrors of 1997-2002

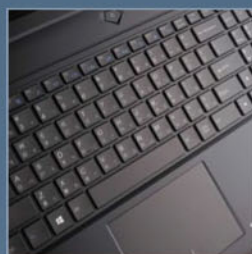
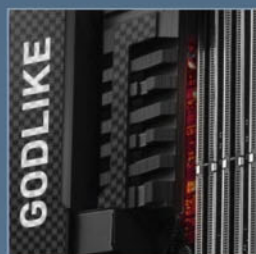
WEIRD WARS

WW2 may be the go to for game developers, but there are far stranger wars to explore.

ON SALE NOW!

Tech²⁵¹

YOUR GUIDE TO PC GAMING HARDWARE



Virtual Insanity

Redefining VR

I must apologise for jabbering on about VR so much of late, but with last month's arrival of the Rift, followed by this issue's HTC Vive, I'm kind of beside myself with joy. I didn't think things could get much better after playing around with the Rift, yet the Vive taught me to redefine what the VR experience should really be.

In essence, VR is much more than a screen strapped to your head. A good Head-Mounted Display is just one part of the jigsaw puzzle that delivers a true VR experience. Admittedly it is probably the most important piece, but without supporting peripherals, you're still left being an observer inside these virtual worlds. For VR to truly encompass the player totally, it's crucial to have motion controls that allow us to interact with virtual objects in a naturalistic way. It's here that the Vive has a huge advantage over the Rift, though it's anybody's guess as to how long this lead will exist. With the Rift Touch controls due sometime in 2016, Oculus will be back on an even footing with Vive.

Even with motion controls, there are still other areas to be explored to deliver the perfect VR experience. Omni-directional treadmills seem to promise the perfect method of locomotion, allowing players to walk on the spot in any direction, which is then translated into in-game movement. Haptic feedback will be much harder to nail – how will technology be able to trick our sense of touch into feeling the difference between virtual fur and felt? And how do you show the difference in weight when lifting a rocket launcher compared to a pistol? I think these two issues in particular will take many, many years to solve, likely involving technology that doesn't exist yet.

The good news is they're not critical to delivering an amazing experience. A great HMD with motion controllers is revolutionary already, and these two pieces of tech will get even better over the next few years. I can wait for them to reach perfection – it's taken 20 years to get here, so waiting another five years for the ultimate VR headset with zero pixilation and superior comfort, combined with motion tracking that can see what my fingers are doing, won't be a problem.

Bennett Ring
Tech Editor



Our Power Award is given to products that are best in class no matter your budget.



Our Smart Buy Award goes to products that balance performance with price tag.

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THE PCPP TESTBENCH

CPU
INTEL I7 3770K
www.intel.com.au



MOBO
GIGABYTE Z77X-UD3H
www.gigabyte.com.au



SSD
CORSAIR NEUTRON
www.corsair.com



RAM
8GB PATRIOT DDR3 2,133MHz
www.patriotmemory.com



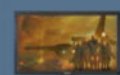
GPU
RADEON HD 7970
www.amd.com



PSU
CORSAIR AX860I
www.corsair.com



DISPLAY
DELL U2711
www.dell.com.au





MOBO

X99A Godlike Gaming Carbon

Even God couldn't afford this

PRICE \$799
www.msi.com

Yep, this is officially the most expensive motherboard to ever cross my test-bench, by a good \$50 or so. Obviously this means that 95% of you guys won't be interested in buying it, but you're probably keen to see how MSI feels it can demand almost a thousand dollars for a motherboard. I know I was. Unfortunately the CPU it's designed for doesn't actually exist in stores yet, so this review is going to be based on features, rather than performance.

MSI is aiming this product at upcoming owners of Intel's brand new Core i7 Extreme Edition CPU, which uses the LGA 2011-3 socket. Those of you with better memories than mine will recall that this is the same socket used by the existing i7-5930K, a six-cored behemoth that came out a couple of years ago. However, the new Broadwell-E chips intended for the X99A are going to up the ante, with an expected core count of – wait for it – *ten cores*. Each of these is HyperThreaded, making this a potent CPU for software that can utilise so many concurrent threads... which is quite rare, to be honest.

This is referred to as an E-ATX board, but not quite the full sized E-ATX you might expect, as it measures 305mm

x 272mm, as opposed to the 305mm x 330mm of the usual E-ATX standard. So it's a little smaller, but the clever PCIe physical lane layout means you can just squeeze four double-slot graphics cards on it, though you'll need an E-ATX case as the bottom card will hang past the edge of the motherboard. This is on the proviso that the new Broadwell-E chips deliver up to 40 PCIe lanes, as quad-NVIDIA setups require a minimum of 32 lanes – AMD doesn't have this limitation when it comes to CrossFire.

The sexy black carbon fibre material used in this board's construction is as unique as it is attractive, while support for eight sticks of DDR4 memory up to a speed of 3400MHz is also great for those who need a maximum of 128GB of memory. There's super-solid reinforcement throughout, from the PCIe lanes to the memory slots to the coolers over the motherboard chipset, so it won't warp or break during an Earthquake. Killer's Wireless AC1535 delivers top-notch Wi-Fi, while DoubleShot pro handles the twin Ethernet ports. I could spend a page talking about the audiophile-grade sound solution but, needless to say, it's damn good.

Competitive overclockers will appreciate the intricate BIOS, but the

lack of an external control box seems an oversight at this price point, as they're quite common with boards from ASUS. Thankfully all the other OC boxes are ticked, with more PCB layers for better shielding, digital PWM controllers, and a new clock generator that MSI claims delivers better stability during high overlocks. Support for the rather rare U.2 SSD connector is quite unique, though most users will stick with the single M.2 port instead – I'd have preferred to see twin M.2 than the use of the U.2 port.

It's obvious that this board isn't for the masses. Instead, it'll be the kind of product shown off at trade shows, in overclocking competitions, and possibly inside incredibly high-end rendering rigs. For the rest of us, it's a glimpse at the kind of product that will become affordable five or ten years down the road. **BENNETT RING**

- Broadwell-E support
- Quad-GPU support
- Top-quality everything

- \$800!?!?
- Only a single M.2 slot

VERDICT:

Overkill for most, we can't wait to see what this thing does with Intel's new Broadwell-E chip inside.

9



THE REAL(ITY) DEAL

HTC's Vive shows Oculus how to deliver the full VR experience.



VR HEADSET

HTC Vive

The all-encompassing VR experience

PRICE \$1350 APPROX
www.htcvive.com

Last month saw my mind being blown by the Oculus Rift Consumer Version 1, the first consumer Head Mounted Display (HMD) that didn't (make me) blow chunks. This beautiful piece of technology finally transported me inside the virtual worlds I've spent three decades peering through a 2D window at. It was a surreal, dreamlike experience, yet there was something missing. The lack of motion control meant that while I was inside these worlds, I couldn't interact with them in a natural way, instead forced to replicate my hand and arm movements with the primitive analogue sticks of the Xbox One controller that ships with the kit.

A month later and I've finally spent some real hands-on time with that other VR kit, the Vive. Built by mobile phone

company HTC with help from the VR dream-team at Valve, I actually did go hands-on this time around, because it's the first VR kit to deliver motion controls in the form of two handheld wands. It's also designed to deliver room-scale VR, as opposed to the seated experience of the Rift, and these two extra features combine to deliver a VR experience that is even more immersive than the Rift. Let's see just how different the Vive experience is.

WHAT'S IN THE BOX?

At a price of US\$899, plus postage and taxes, the Vive ends up costing around \$1350 for Aussies, \$200 more than the Rift. However, you get a heck of a lot more for your money. As well as the HMD, there's the aforementioned twin

motion controllers.

There's also two base stations that are called Lighthouse units, and these provide the invisible array of light beams that are detected by the sensors that cover the HMD. There's also a Link box that goes between the HMD and your PC, along with a stack of different cables.

The minimum system requirements are basically identical to the Rift, with a Core i5 4590 CPU, GTX 970 GPU and 4GB of RAM. Despite having so many more components, it only needs a single USB 2.0 port, compared to the three USB 3.0 of the Rift, along with a single HDMI 1.4 video output. Note that these are the minimum suggested specs; they're fine for powering the launch range of VR titles, which all have rather

simplistic graphics. However, as we start to see more detailed games ported to VR, that GPU is going to be a bottleneck, so I'd suggest going for the fastest graphics card you can afford.

HOME RENOVATIONS

One of the biggest strengths of the Vive is also likely to be one of the biggest turn-offs for prospective buyers – the room-scale tracking. While it does support seated mode, the vast majority of current Vive titles require room-tracking to work. The minimum clear space you'll need is 2m x 1.5m, but for the best experience Valve recommends a 3.5m x 3.5m area. I'd highly recommend a buffer space around this area of



■ Another minor complaint is that the Vive's HMD is totally sealed around the user's eyes ■

another 70cm or so, as you'll often be right on the edge of the play-area, waving the wands around, which is a great way to punch the wall and break your controller.

Each of the Lighthouse base stations must be mounted diagonally opposite each other on a corner of the play area, at ceiling height. A couple of handy wall-mounts are included in the box, but you'll need to drill holes into the wall to use them – camera tripods will also do the job. Each base station requires a power point to function, as does the Link box. There's also a synch cable to connect the two boxes, but this is only necessary if they can't see each other, say if there's a light shade hanging between them.

Once these are in place, it's time to plug the Link box into your PC, and then

the HMD into the Link box. While this does add even more complexity to the setup, it is a handy little safety feature; pulling too hard on the tethering cable that connects the HMD to the Link simply disconnects the cable, rather than yanking out your USB and HDMI ports on the PC.

Setting up the hardware will take an hour or so, but the software side of the equation is much quicker. Calibrating your play space is a breeze – simply walk around the edge with a single controller. However, I did find that this area drifted over time, so that the virtual play space didn't quite match the real world one, requiring recalibration every day or so.

Updating the firmware is also a little buggy, with the controller update failing several times before working. Still, considering how revolutionary this new technology is, these minor quirks are very easy to ignore.

THE HEAD MOUNTED DISPLAY

As you can see from the pictures, the Vive HMD has a much more bulbous look to it than the Rift. It's only 85 grams heavier than the Rift, at 555 grams total, but feels significantly heavier as the centre of gravity is more towards the front. The straps used to hold it in place also sit higher on the user's head when compared to the Rift, and there's no give in them when mounting it. As such, the Rift is definitely the comfier of the two, but you probably won't complain about the Vive until you realise how much comfier the Rift is. I wore the Vive for days at a time and didn't suffer from any neck strain or physical discomfort. There's room inside for specs, but I found they'd often bump the lenses within, causing them to get dirty, requiring me to take off the HMD, clean my glasses, then put it on again.

Another minor complaint is that the Vive's HMD is totally sealed around the user's eyes. While this does make it a more immersive experience, as you're totally cut off from the real world, it also means there's hardly any ventilation. You will sweat when playing the more physical experiences, which can lead to the lenses fogging more than on the Rift.

However, where the Vive has the edge over the Rift is its field of view. While both claim to have a 110-degree field of view, the Vive has more verticality. This means there's less of the scuba-mask effect when using it, but it comes at a trade-off. Both HMDs have identical

2160 x 1200 screens, split down the middle to give each eye 1080 x 1200 pixels. As the Vive spreads these over a wider area, the pixel structure and grid between pixels is more obvious. It's not a night and day difference compared to the Rift, but as the pixel issue is arguably the biggest problem with both headsets, image purist will lean towards the Rift for the cleanest visuals. Both headsets could use a doubling or quadrupling of pixels though, as they current resolution just isn't good enough to resolve far-away objects in long distance scenes, or to recreate the intricate features in highly detailed graphics. This is why the best VR experiences use very simple, blocky art styles, and also why porting non-VR games to these platforms isn't always a good idea.

One final strength of the Vive HMD regards God-rays, the strange halo effect today's VR headsets exhibit when displaying a bright object on a dark background. Despite the Vive screen being approximately three times brighter than the Rift, the issue of God-rays seems less prevalent here. This is likely due to a difference in the design of the lenses.

So the Vive HMD isn't as comfy nor clear as the Rift. On the other hand, it's got a wider field of view and doesn't have halo issues. I personally think the Rift is the slightly better of the two, but others prefer the Vive, so it would seem that they're both much of a muchness.

VR IS MORE THAN JUST A HEADSET

Playing with the Rift for the first time was a revelation, finally delivering on the promise of working Virtual Reality. I didn't think it could get much better... until I stepped into the world of the Vive. It's hard to understate just how important the inclusion of the control wands and room-scale tracking is to the entire experience.

When I'm playing Rift games, I'm inside them, but I'm a passive participant forced to rely on strange, unnatural controls to influence the world around me. But when I'm in the Vive, I can finally reach out and manipulate objects using the same gestures I use in the real world. Even simple acts like using a drill to unscrew bolts on an access panel become thrilling, at least for the first few times.

Being able to walk around these virtual play spaces not only feels more immersive, it goes a long way to solving the motion sickness caused by seated



VR experiences. While I never felt really ill while playing the Rift, some first person games did require me to take a break every hour or so, especially when movement was controlled like a standard FPS, with the left analogue stick. Yet with the Vive I could play for several hours at a time, without feeling even a twinge of discomfort. Obviously you can only walk for several metres before hitting the edge of the play space, which is why most Vive games are comprised of room-sized play spaces. If you need to move to another room, it uses a method called teleportation – simply point the laser attached to one motion controller into a different area, hit a button, and you're moved there instantly. Rift uses this method even more, and it's a surprisingly effective way of getting around the issue of motion sickness.

You're probably wondering what happens when you approach the

edge of your real-world play space while walking around in the Vive? The answer is Chaperone, a simple system that projects a wireframe wall in front of you as soon as you approach the confines of your real-world area. It's very effective, stopping me dead in my tracks whenever it hummed into life, though a couple of times during more enthusiastic moments I did almost ignore it.

The final ace up the Vive's sleeve is the fact that SteamVR is built upon Valve's mature Steam service. This supports all of the same features as Steam, such as in-game messaging, friend lists, VOIP and screenshots. In comparison, Rift's virtual interface is a threadbare affair – you can add friends and start games, but that's about it. Given that Oculus is owned by Facebook, I'm confident that it won't take long for a solid suite of social networking features are added to the Rift store.

WAIT AND SEE

If you want to buy either of these kits now, too bad. They're so understocked and oversold that even if you order a Vive now, it won't arrive until July at the earliest. Rift orders are even more delayed, with an expected AU shipping date of August. By this time, the Rift's Touch controllers should hopefully be ready, and there are rumours that room-scale tracking will work thanks to the Touch's second camera. If that's the case, then the Vive and Rift will basically be on par with each other, and it'll come down to software support. Until then though, there is only one VR experience that delivers the fully immersive experience that this new technology demands, and that's the Vive. **BENNETT RING PC**



- Great HMD quality
- Motion controls work beautifully
- Room-scale tracking is immersive
- Not as comfy as Rift
- Rather expensive
- Pixels are still visible

VERDICT:

The Vive shows that the true VR experience really needs motion-based input controls, a feature the Rift currently lacks.

10

MEMORY HERTZ

Random Access with your host, **Bennett Ring**



Like it or not, if you're building a new gaming rig, you're probably going to have to make the switch to DDR4 memory. With Intel's new Skylake 6th Gen Core Processor relying on this memory type, that old DDR3 kit in your last PC is only good as a letter opener. Thankfully DDR4 prices have plummeted to the point where they're as affordable as DDR3, but the question remains – what benefit will DDR4 bring to my gaming performance?

MOBILE COMES FIRST

Unfortunately one of the main reasons Intel has moved to DDR4 has nothing to do with desktop performance. It's all about saving power, as today's mobile PC market is one of the few remaining growth areas. Laptop manufacturers are all about saving power, and DDR4 brings substantial energy reductions to the table.

High-speed DDR3 kits require a hefty 1.65V of power to operate at their highest frequencies, with

mainstream DDR3 dropping to 1.5V. Even the special low-voltage version of DDR3, called DDR3L, requires 1.35V. In contrast, DDR4 drops the required voltage by a long way. Standard DDR4 memory running at 2133MHz needs just 1.2V, while the special low-voltage version favoured in laptops is even lower, at 1.05V. It might not sound like much, but even small drops like this can help extend battery life.

Faster Frequencies

There are several other minor technical benefits introduced with DDR4, but for most of us they're insignificant. The main factor that gamers will care about is its ability to reach much higher frequencies than DDR3. Even at the end of its lifespan, DDR3 was struggling to hit 3000MHz, and these rare modules would cost a fortune. In stark contrast, DDR4 is designed to reach for the skies when it comes to frequency. Today's Skylake processors require DDR4 with a base speed of 2133MHz, but it's already possible to buy DDR4 4000MHz kits, almost twice the speed.

Sure, these 4000MHz kits are freakishly expensive, but it's possible to buy slightly lower kits at reasonable prices. For example, DDR4 2666MHz kits are only \$15 to \$25 more expensive than 2133MHz kits, making them an easy option on the wallet. There is a trade-off to these faster frequencies though, in the form of higher latencies. For example, most of today's DDR4 kits have a CL value of 14 or 15, as compared to the CL12 of DDR3. Thankfully the higher frequency of the memory helps to even out this drop in latency. Still, if you can buy two identically priced kits operating at the same frequency, go for the one with tighter memory timings.

So then, does this higher frequency help game performance? The answer is... rarely. For the vast majority of games, you won't notice a lick of difference unless you're gaming on a system that relies on the CPU's iGPU. Given that you're reading PC PowerPlay, and not CasualGamerz Inc, it's highly

unlikely that you're stuck with such primitive graphics processing. When it comes to a PC with a discrete graphics card, it appears that only one genre of game tends to notice any kind of performance increase – those with large, open-world environments that need to constantly stream data off the memory. And even in this specific instance, it varies by game. As you can see from our benchmarks, Fallout 4 noticed a minor speed increase as memory scaled, but GTA 5 did not. Neither did the GPU intensive FireStrike Extreme.

Given that so few games notice any form of performance increase, we'd suggest sticking with the more affordable DDR4 memory types, unless you're looking for world record overclocking results. With DDR4 2666MHz just a few dollars more than DDR4 2133MHz, this is the sweet spot in terms of performance versus cost, as it may give you a slight boost in rare circumstances without breaking the bank.

DDR4 Benchmarks

FALLOUT 4 Benchmarks

1920 x 1080, Ultra Quality	Avg FPS
Corsair Vengeance LPX 3600MHz	62
Corsair Vengeance LPX 2666MHz	60
Crucial DDR4 2400 BallistixSport LT	57
Crucial CT2K8G4DFD8213 2133MHz	52

GRAND THEFT AUTO V Benchmarks

1920 x 1080, Ultra Quality	Avg FPS
Corsair Vengeance LPX 3600MHz	76
Corsair Vengeance LPX 2666MHz	76
Crucial DDR4 2400 BallistixSport LT	75
Crucial CT2K8G4DFD8213 2133MHz	74

Memory Kits

Corsair Vengeance LPX 3600MHz 2 x 8GB with cooler

PRICE \$399
www.corsair.com

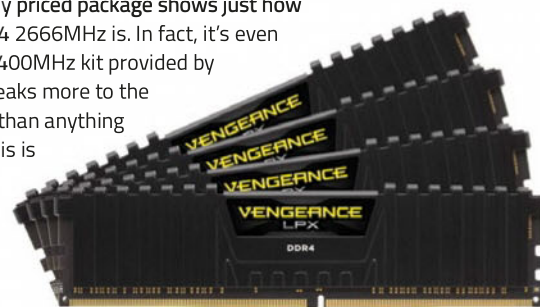
This was the kit that gave us a 20% performance increase in Fallout 4 when compared to DDR4 2133MHz. However, is it really worth spending 300% more for such a slight speed boost? We'd suggest not, leaving kits of this calibre to professional overclockers and those with more money than sense.



Corsair Vengeance LPX 2666MHz 2 x 8GB

PRICE \$135
www.corsair.com

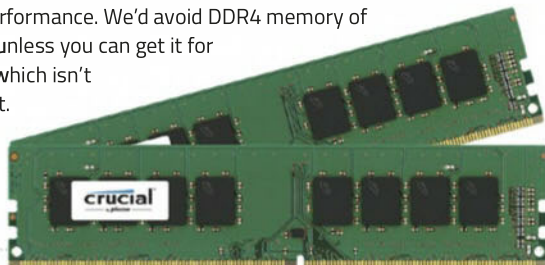
This competitively priced package shows just how affordable DDR4 2666MHz is. In fact, it's even cheaper than the 2400MHz kit provided by Crucial, but that speaks more to the Crucial's high price than anything else. Regardless, this is the kind of kit that we'd recommend for those looking to build a performance PC.



Crucial CT2K8G4DFD8213 (2x8G) DDR4 2133MHz RAM

PRICE \$119
www.crucial.com

At just \$15 less expensive than the DDR4 2666MHz kit, it's easy to see why we think 2666MHz is the right choice for PC gamers. In the overall scheme of things, a \$15 saving is insignificant, and in certain instances the faster memory will provide a slight boost to game performance. We'd avoid DDR4 memory of this speed unless you can get it for \$75 or so, which isn't possible yet.



Crucial (2x8GB) DDR4 2400 BallistixSport LT w/Heatsink BLS2K8G4D240FSB

PRICE \$165
www.crucial.com

Unfortunately for Crucial, this memory kit is priced well above the average for DDR4 2400MHz, with most competing kits going for around \$100. Making matters worse is the rather loose timing, with this kit rated at CL16 – in comparison, Kingston's HyperX DDR4 2400MHz kit has a timing of CL14, and is only \$101 to buy.



3DMARK Firestrike Extreme

	Score
Corsair Vengeance LPX 3600MHz	8456
Corsair Vengeance LPX 2666MHz	8412
Crucial DDR4 2400 BallistixSport LT	8424
Crucial CT2K8G4DFD8213 2133MHz	8376

AIDA 64 Memory Copy

	MB/sec
Corsair Vengeance LPX 3600MHz	45301
Corsair Vengeance LPX 2666MHz	35872
Crucial DDR4 2400 BallistixSport LT	30655
Crucial CT2K8G4DFD8213 2133MHz	26112

GAMING LAPTOPS

Gaming laptops are really getting it right. **Bennett Ring**



It's finally happened – after reviewing gaming laptops for more than a decade, I'm finally convinced that the manufacturers have nailed it. In the past, we've had to make too many compromises to get gaming power into a laptop chassis. The most obvious problem was a lack of GPU power, but NVIDIA's latest mobile chips are now delivering performance on par with its desktop parts, and have been for about a year or two. However, they had one major issue – fan noise that sounded like you were firing up a hairdryer every time you played a game. I'm happy to report that the following laptops all remained relatively quiet during my testing, quashing this final issue

once and for all. So now that I've given gaming laptops the thumbs up, what should you look for when buying one for yourself?

MOBILITY VERSUS PERFORMANCE VERSUS PRICE

I'm constantly asked for advice on gaming laptops from friends and family, and the first question I ask them is whether they want something light and portable? If that's the case, they're going to have to pay a little extra, while getting less performance. It's now possible to pick up a 13-inch or 15-inch gaming laptop that weighs a couple of kilograms, but I've also found that these tend to have louder fans – the smaller internal space means the fans have to do more hard work.

If mobility isn't an issue, then I usually suggest going for one of the 16 to 17 inch monsters like those I've reviewed here. Sure, they weigh a good five kilograms or so, but if you're only moving it twice a week, that won't be a back-breaking load. Larger laptops don't need such specialised components, so they tend to offer better performance at a reasonable price.

The final consideration is – obviously – price. There are now dozens of "gaming" laptops selling for around the \$1300 price point, but sadly they lack the serious grunt required for the latest games. They'll play the likes of World of Warcraft with ease, but fire up The Division and you're going to be looking at a slideshow.

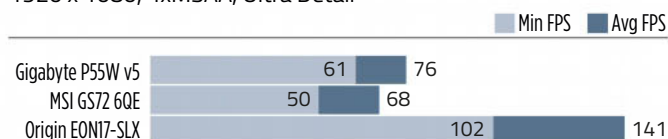
At a bare minimum, you'll need to pay around two grand to get decent levels of gaming performance, and you can double that if you want something that can churn through anything you throw at it.

The following laptops are all premium models with a focus on power and features over mobility and affordability. The good news is they're all up to snuff when it comes to gaming prowess, and start off at a very reasonable price point. They might not be exactly portable, but at least you know they're going to do what you want them to, unlike gaming laptops of the past, without requiring ear plugs every time you hit the Play button in Steam.

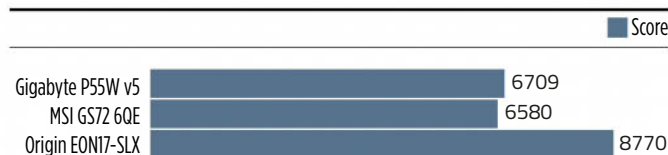
Laptop Benchmarks

GRID AUTOSPORT Benchmarks

1920 x 1080, 4xMSAA, Ultra Detail

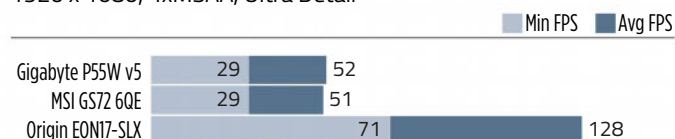


3DMARK Firestrike

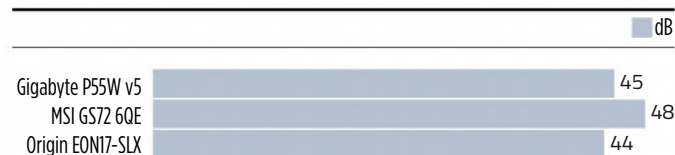


SHADOW OF MORDOR Benchmarks

1920 x 1080, 4xMSAA, Ultra Detail



FAN NOISE





LAPTOP

Gigabyte P55W v5

Power and price in balance

PRICE \$2099

www.gigabyte.com.au

This is the fifth version of the P55W from Gigabyte, so they've obviously had some time to get things sorted. It's the cheapest laptop in the roundup, but don't let that fool you – thanks to some savvy software installation, this actually manages to beat out some of the competition.

At this price point, the fully plastic enclosure is forgivable, and Gigabyte has ensured it's thick enough to handle a bit of a beating. The 15.6-inch screen is the smallest of the three here, but is just big enough to deliver an immersive gaming experience. The screen resolution of 1920 x 1080 is fine for these dimensions, with pixel structure nearly invisible. Gigabyte claims it has a 178 degree viewing angle, the crucial spec that signifies this is an IPS panel. It's no wonder that colour and contrast look pretty damn solid, yet there's very little of the motion blurring that these panels can suffer from.

Tipping the scales at 2.5kg, the P55W v5 feels heavier than it really is, but that's probably because I've used so many sub-1kg ultrabooks of late. By gaming laptop standards, this is actually pretty damn light. A decent range of I/O ports line the exterior, including a DVD drive. Three USB 3.0 Type A, one USB

3.1 Type C, one HDMI 2.0, one D-Sub, one RJ-45, as well as the usual mic-in/headphone out ports are all included, along with an SD Card reader. Wireless network is of the latest 802.11ac standard.

Considering it's just over two grand, the internals are extremely impressive. Intel's Core i7-6700HQ seems to be the flavour of the month when it comes to gaming laptops, and it feeds off 8GB of DDR4 2133MHz memory. A single 128GB M.2 SSD is home to the OS, but only 103GB is usable. Another 1TB of mechanical storage is included for your game collection, but I'd recommend upgrading the SSD to the 256GB option. Rounding out the hardware is NVIDIA's excellent GTX 970M GPU, which performs on par with a desktop GTX 960.

As you can see from the benchmarks, this laptop delivered playable performance across all of our games. Don't worry too much about the low min FPS rate in Mordor, as it appears to be a glitch at the start of the benchmark as it loads in – performance is silky smooth thereafter. To my delight, the P55W v5 managed to perform so well while remaining extremely quiet, measuring just 45dB on the sound meter. It even

■ Rounding out the hardware is NVIDIA's excellent GTX 970M GPU, which performs on par with a desktop GTX 960 ■

outperformed the more expensive MSI, likely due to the lack of bloatware that MSI loves to load onto its gaming laptops.

It might have taken five iterations, but Gigabyte has delivered an excellent gaming laptop targeted at the more affordable end of the market in this machine. It's well built, with an excellent display and powerful specs, giving it the chops to handle today's titles. Best of all, like all of the laptops here, it seems Gigabyte has finally cured the issue of annoying fan noise, making this a pleasure to use. 

- Fantastic price
- Powerful specs
- Great screen

- Plastic chassis
- Small SSD at this price

VERDICT:

If you're looking to spend two grand on a gaming laptop, the P55W v5 is hard to go past.

9



LAPTOP

MSI GS72 6QE

What price for a few extra inches?

PRICE \$2599
www.msi.com

In some ways this laptop is extremely similar to the Gigabyte, with a set of features that are almost identical. Yet from a physical perspective it's a very distinct machine, with a totally different form factor and size.

The biggest change is the use of a larger 17.3-inch screen, which you might assume would make this a much larger, heavier laptop. Yet MSI has used some clever engineering to make this laptop incredibly thin, measuring just 22mm when closed, which is significantly thinner than the Gigabyte. As a result, despite being much longer and wider, this laptop is only 100 grams heavier than the P55W v5, weighing 2.6 kilograms. That's exceptional for a 17.3-inch laptop, which probably accounts for the \$500 increase in price.

Despite stretching the 1920 x 1080 resolution over a wider space, I was very surprised to see that pixel structure still wasn't too bad – it's usually very noticeable on screens of this size. Once again we see IPS technology used here, but it didn't quite have the punch of the Gigabyte screen, though motion blur isn't a problem. A 4K screen option is available, though there's no way the GPU within has the power to push so many pixels, so I'd avoid this.

MSI has gone for a slightly different I/O configuration than Gigabyte. There's no optical drive, nor any Type-C USB ports. Even the HDMI output has been downgraded, from v2.0 in the Gigabyte to 1.4b in the MSI. Instead we're given twin USB 3.0 and twin USB 3.1 Type A ports, an SD/XD card reader, and twin Mini DisplayPort outputs. Obviously there's also the headphone/mic jacks. Killer's gaming LAN solution is delivered alongside 802.11ac.

Another area where the MSI differs from the competition is the above-average sound solution. Now, don't get me wrong, serious gamers are still going to want to use a decent set of headphones, as the tiny speakers used in laptops really struggle to deliver clear audio at high volume. However, MSI's Audio Boost solution, which uses 2x2W/1 Speakers does seem to deliver better audio than the competition. Ditto with its internal audio chipset, which delivered noticeably louder and clearer audio over a decent set of headphones.

While the external options are quite different to the Gigabyte, heading under the hood reveals a basically identical hardware solution. Once again we see Intel's ubiquitous i7 6700HQ pushing the polygons, with its Turbo speed of

3.5GHz more than enough for today's games. 8GB of DDR4 2133MHz supplies this with date, which is in turn fed by a 128GB M.2 SSD. Another 1TB mechanical drive provides extra storage at the cost of speed. Finally we have NVIDIA's popular GTX 970M with 3GB of GDDR5 memory.

So why did Gigabyte's model have a 20% lead when it came to performance in Grid Autosport? There can only be one explanation – the extreme amount of software that MSI loads its laptops up with. With 13 different applications hiding at the bottom right of the screen, the 6QE has twice as many pieces of bloatware installed as the Gigabyte, and three times that of the Origin. Users can clean these up after purchasing, but it's annoying.

Despite this niggling issue, MSI has delivered a fairly affordable 17.3 inch gaming laptop that manages to keep the weight down. Whether that extra screen size is worth \$500 though is debatable. **PC**

- Low weight for 17.3-inch form factor
- Powerful specs
- Very thin

- Big price leap for two more inches
- Lots of bloatware.

VERDICT:

If you want a 17.3-inch laptop, yet don't want to jump up to the price of the Origin, the 6QE delivers solid value for money and excellent performance.

8



LAPTOP

Origin EON17-SLX

You pay for what you get

PRICE \$5699
originpc.com.au

The previous two laptops both delivered solid gaming performance at a great price point, which is basically the opposite approach to this mega-beast from Origin. This company is renowned for its ridiculously fast, super-expensive machines, and the EON17-SLX is no exception. With more horsepower than most \$4,000 desktop PCs, this is an absolute speed demon of a machine, aimed at those who need the ultimate in frame-shredding capabilities.

Like the MSI, this too uses a 17.3-inch display, but Origin hasn't tried to make this laptop thin nor light. Weighing just under 5kg, it's almost twice as heavy as the MSI, so I wouldn't plan on moving this thing around regularly. Despite the large screen, it's only a 1920 x 1080 panel, but it's got an ace up its sleeve. Not only is it a 75Hz panel, leading to even silkier performance, it's also G-Sync compatible, which is even more valuable in laptops where performance can vary so much. Not that the twin GPUs of this behemoth will struggle with much...

A huge range of ports adorn the exterior, with five USB 3.0 Type A, and a single USB 3.1 Type C, along with twin mini DisplayPort and HDMI out. Audio is delivered courtesy of Creative's Sound Blaster Xfi MB5 chipset, which

has enough outputs to power a 7.1 sound system. This makes this laptop perfect for mounting under your TV as a moveable gaming system, and it even has S/PDIF.

But it's what inside that makes this machine remarkable... with one minor exception. Intel's Core i7 6700 is a desktop part that can boost up to 4GHz, and Origin claims it can even be overclocked. 16GB of DDR4 2133MHz is more than enough for anything you can throw at it, though I was surprised at the lack of storage. A single 240GB M.2 SSD is included at this price, which will fill up in no time – thankfully there are multiple options for extra storage if you do choose to purchase this behemoth.

Most impressive of all the specs is the inclusion of twin GTX 980M GPUs, each packing 8GB of dedicated memory. These perform on par with a desktop GTX 970, and the fact there are two of them explains the scorching benchmark results. Best of all, this laptop measured just 44dB of fan noise under load, making it the quietest of the bunch!

If money is no obstacle, and you need the ultimate in power, Origin has once again delivered an insanely fast laptop that finally smashes the old fan-noise problem. **PC**



Most impressive of all the specs is the inclusion of twin GTX 980M GPUs, each packing 8GB of dedicated memory.

- Insane performance
- G-Sync display
- Low fan noise

- So expensive
- So heavy

VERDICT:

Want the ultimate in gaming laptops? Look no further, just make sure you upgrade the storage.

10

KEYBOARD

Steelseries Apex M500


Elegant simplicity

PRICE \$145
steelseries.com

With the Apex M800 released last year, Steelseries created an excellent, premium priced and featured gaming keyboard that utilised the company's own proprietary mechanical keys so it seems a little odd to follow up such a great product with one that sits at a budget price point and uses the well-known Cherry MX Red switches instead of trying to capitalise on their own. It turns out to have been an excellent decision, as the Apex M500 is one of the most elegant and pleasant to use keyboards we've gotten our fingers on in a good long while.

Aimed at the eSports market, the M500 has quite a no-frills design, with no AV controls or extra macro buttons bulking out the frame, and only a single lighting colour (blue) available. As a result this full sized keyboard is the smallest of the four we've looked at this month. The Cherry Reds have that nice soft feel

that has made them the most popular of Cherry switches and, if anything, feel a little squishier than usual. Both typing and gaming feel great, as even though the keyboard is smaller than the others we looked at, nothing is cramped, and the response of the switches is as accurate as we've come to expect from Cherry switches.

It may disappoint some people that there is no option for other colour switches in the M500, like the clicky Blues or resistant Browns, but even so, the Apex M500 offers excellent value for money for anyone looking for a keyboard offering great performance with no redundant extras. **DANIEL WILKS** 



- Elegant design
- Feels great
- Responsive

- Only Cherry Reds
- No USB pass-through

VERDICT:

A beautifully simple gaming keyboard aimed at eSports but perfect for anyone on a budget.

9

KEYBOARD


Logitech G610 Orion

Logical options

PRICE \$149
www.logitech.com

In much the same vein as Steelseries, Logitech has moved away from the proprietary keys of their premium keyboard (the Romer-G keys of the G810 Orion Spectrum) to utilise Cherry keys on their more modestly priced follow-up keyboard. The reason given for moving to Cherry is sound – although Logitech is happy with the reception and success of the Romer-G keyboards, they understand that some gamers prefer Cherry, so have made a range to cater for their tastes as well. Whilst not as heavily featured as the G810, the G610 is by no means a bare-bones board, with AV controls, and F-key macros the same as the more expensive keyboard. Rather than a full RGB lighting scheme, the G610 instead features an elegant white backlight. If you're looking for a little more control over the lighting, the driver software allows users to control intensity on a per key basis as well as

utilise a number of keyboard or key specific effects. While it is a little disappointing that there is no USB pass-through or AV connection in the board, there is more than enough to make it an extremely attractive and enjoyable option if you're looking for a new keyboard.

The G610 has three switch options available, Red, Brown and Blue. We've used both the Red and Blue versions of the keyboard, and with the exception of the Blues driving everyone in the office crazy thanks to constant clicking. If you're looking for a new gaming keyboard with a few of the features seen in higher priced models, look no further. **DANIEL WILKS** 



- Great design
- Choice of Cherry switches
- AV controls

- AV controls are very clicky
- No USB pass-through

VERDICT:

An excellent budget mechanical keyboard that offers performance over flash.

9

KEYBOARD

Tt eSports Poseidon Z Forged

Built to last/wound

PRICE \$199
au.ttesports.com

The Poseidon Z Forged is so sturdy, weighty and long that it could double as a weapon, shield or battering ram when not being used as a keyboard. This size and heft is due to a number of factors - the top of the chassis is a huge expanse of metal, there is another sheet of metal inside that supports the switches, and each side of the keyboard is bracketed with a row of programmable macro keys. The Poseidon Z Forged offers an RGB colour scheme but goes a step further than many other similar RGB keyboards by colouring the steel plate to which the LEDs are affixed is painted blue, making them look brighter than on any previous Tt keyboard. The ten macro keys are easily programmable and the option for five profiles means you can customise it with up to 50 macros.

Once again Tt eSports have opted for their certified Kailh switches for the keyboard and whether you're using the

Blue or Brown they feel all but identical to their similarly coloured Cherry counterparts. Although more expensive than the G610 and M500, the Poseidon Z Forged does feature a few extra functions that lend it appeal and value. The keyboard features two USB pass-throughs as well as a built in DAC with headphone and mic connections. A nice magnetic wrist rest also comes with the keyboard if you have a hankering to make it even larger.

The only thing that stands in the way of the Poseidon Z Forged being a truly great keyboard is the size. It's enormous and takes up a lot of desk real-estate, but if you've got the space and want something definitely built to last, it's quite the machine. **DANIEL WILKS PC**



- Built like a tank
- Great drivers
- Built in DAC

- Enormous
- Seriously huge
- 503x156.2x43 mm

VERDICT:

If you've got the desk real-estate to fit it, the Poseidon Z Forged is a truly great keyboard

9

KEYBOARD

Razer BlackWidow X Chroma

Definitely in need of a Cherry-flavoured infusion

PRICE \$195
www.razerzone.com

Given that Razer pretty much single-handedly kickstarted the mechanical switch craze in the broader gaming market with its first BlackWidow, it's kind of a shame to see the latest iteration of the brand come to so little. The new BlackWidow X Chroma is a striking keyboard, with a very solid chassis, and some versatile lighting - if that's your thing - but its keys are a massive disappointment.

The Razer Mechanical Switches which are meant to be a big draw for the keyboard - and that no doubt keep prices down compared to the limited output from Cherry itself - feel muddy and in-exact, with a travel that seems like it's always about to get stuck. In fact, the backspace key does that, and more than once a quick succession of key-strokes either failed to register, or then registered moments later all at once. On top of that, Razer's gone for a non-standard,

very fine font on the keys themselves, which can get in the way of fast, fluid typing by eye. So, whether you're a touch typer or a hunt-and-pecker, the Chroma lets you down, while the keyboard's tendency to miss keystrokes makes it a hard unit to recommend for any gaming genre.

It'd be bad enough in an FPS - in a MOBA or RTS, it's downright lethal. And let us not talk about the left cursor key actually coming off during normal use. Any one of these issues, taken in isolation, could be chalked up to a one-off fault, but all together, in the one unit it suggests some serious issues with Razer's quality control. **DAVID HOLLINWORTH PC**



- Excellent chassis
- Versatile lighting

- Sticky keys
- Lack of registration for quick key strokes
- Loose keys

VERDICT:

Great design, but squandered on a keyboard that fails at its most important job - reliable typing in and out of game.

4

CONTROLLER

Razer Wildcat

Excellent buttons but stiff competition

PRICE \$199

www.razerzone.com

Don't believe the beautiful rotating 3D animation of the Wildcat on the official Razer website. There's no way you're going to be able to get the palm grips stuck on that neatly.

Yes indeed - self-applied palm grips on this \$200 gamepad, and it's almost impossible to get them on straight. Plus, for the first week or so the edges of the stickers will feel rough, until your filthy palm-sweat softens them.

I guess the Wildcat is more like a quality baseball glove? It starts off all stiff and uncomfortable, but after a few weeks it mellowes, becomes supple? Well, almost.

One upon a time there were at least six gamepad brands to choose from, but the Xbox One controller has essentially killed the market.

The Wildcat doesn't compete with a standard X-bone pad though. It's the cool aftermarket answer to the Elite.

Like the Elite it has four more buttons, but unlike Microsoft's own superpad, it doesn't have wireless. It also doesn't have swappable thumbsticks, though it DOES have all the mic and headset stuff built into the bottom - just plug in any 3.5mm jack.

The thumbsticks are merely good, but where the Wildcat truly excels is in the buttons. They are very crisp, have really exact travel, and feel like they will last for at least several years of hard mashing. And the sticker handgrips, once they season, do make the Wildcat feel better in the hands than the basic controllers, if not necessarily superior to the Elite's soft-touch coating.

So it's sturdy, eventually comfy, clicky, and a bit blingy. What else do you need?

ANTHONY FORDHAM 



- Good weight and ergonomics
- Excellent buttons
- Built-in audio controls

- No wireless at this price?!
- Palms need to "season"

VERDICT:

A worthy rival to the Xbox One Elite, albeit one without wireless

6

MOUSE

Logitech G900 Chaos Spectrum

Big price, big performance

PRICE \$269.95

gaming.logitech.com

The last two true innovations in the mouse's 40+ year history were the mouse wheel and the optical sensor. Everything else is just... unnecessary.


But that doesn't mean it's not cool or doesn't work. As part of an ongoing trend, Logitech justifies a \$270 price tag (find it the street for \$199) by packing the G900 with tonnes of extra features.

All of these are geared toward gaming performance - ultra-low latency sensor, mechanical buttons, something called "clock tuning technology" which maximises battery life, and 11 programmable buttons. You can even pull the two left thumb buttons off and stick them on the right side of the mouse instead, for lefties.

Thing is though, this mouse suffers from the same problem as pretty much every other "pro gaming" mouse. The real e-Sports types still prefer the Microsoft Intellimouse Optical 1.1.

They say its sensor, the MLT 04, despite being "slower", better handles the very tiny movements that competition level FPS requires. Is this true? Who knows? Maybe it's psychosomatic. Maybe it's techno-snobbery. Maybe it's because the Intellimouse costs less than \$100.

So as usual the pro-gaming credentials aren't what sell the G900. It has to fall back on its hand-feel (which is excellent), its wireless mode (which works well and is hot-swappable with the cord unlike some other mice), and even I guess the way you can program the logo to light up in different colours.

It's a very snazzy object to have on your desk, but all the DPI in the world will never justify spending over \$250 on a mouse. ANTHONY FORDHAM 



- Buttons swap for left- or right-handed use
- Very light
- Excellent wireless

- No weight adjustment
- Doesn't switch off automatically

VERDICT:

Full-featured, powerful, ambidextrous and probably way more mouse than you need

9



ROUTER

D-Link DIR-895L AC5300 MU-MIMO Ultra Wi-Fi Router

Not quite fully baked

PRICE \$649
www.dlink.com.au

First announced at CES 2015, it's taken over 16 months for D-Link's top-of-the-line Wi-Fi router to finally make it into stores. This is likely a result of the MU-MIMO functionality included within, which is still not actually enabled. At the time of press, D-Link was expecting to release a firmware update in the future that would finally bring MU-MIMO support to the table. So what the heck is MU-MIMO, and why should you care that this router has it?

Today's routers can only send and receive data packets to one device at a time. When multiple devices are connected, one device is getting data, while the rest wait. Thankfully this happens so quickly that we usually don't notice, until we start to load up lots of extra devices to the network, or we start eating up the bandwidth. MU-MIMO is a new Wi-Fi standard that changes this approach, by allowing a router to talk to multiple devices simultaneously, with each device having its own dedicated stream of data. This helps improve performance without requiring more bandwidth. However, it's taken a couple of years for the likes of Broadcom – who supply the chipset in this router – to get it working properly. In fact, they still haven't. It's more than a little dodgy

to promote a feature in the name of a product which isn't actually working yet.

D-Link claims this is a 5300Mbps router, delivering twin 2166Mbps networks on the 5GHz band, along with a single 1000Mbps network on the 2.4GHz frequency. However, the 802.11ac standard tops out at 1733Mbps, so how has D-Link managed to deliver 2166? The answer is NitroQAM, an update on the TurboQAM enhancement it's used in prior routers. The problem is that this isn't supported by any client devices, such as phones, tablets or laptops, so there's no way this router will hit those speeds in the real world unless it's talking to another DIR-895L. This means it's actually limited to the 1733Mbps of other 802.11ac devices. We understand that D-Link wants to hit shelves with a router claiming performance numbers better than anybody else, but when it uses marketing shenanigans like these, their credibility takes a blow.

So just how fast is this router? Well, it really depends on what you're connecting it to. As the router uses a 4x4 transmitter/receiver configuration, you're going to need an identically equipped 4x4 device to hit the maximum theoretical speed of 1733Mbps. These



are about as common as dropped iPhones with no cracks in their screen. We tested on a 3x3 equipped laptop at a range of ten metres with one brick wall in the way, and measured a speed of 712Mbps, around the middle of what we'd expect. However, for this router to really fly, you'll need to connect five or more devices to start sucking up all that bandwidth.

There's no denying this is a speedy router, but D-Link really should be called to task for some rather shady marketing tactics. Wi-Fi networking is confusing enough to mainstream users without misinformation being fed to them by the manufacturer. **BENNETT RING PC**

- Top-tier performance
- Should support MU-MIMO... one day
- Extremely overpriced
- MU-MIMO doesn't work yet
- Top advertised speeds aren't possible

VERDICT:

There are much cheaper options out there that will deliver the same performance, and who have MU-MIMO enabled already.

6

HOTWARE²⁵¹

with Terrence Jarrad

01 Shock Clock

Price: \$150 • Distributor: Pavlock
tinyurl.com/z582hbx

Let's be honest, waking up in the morning can be HARD. Vibrating wrist bands, alarm clocks, and mobile phones; all alarms that a dedicated sleeper can ignore with training. Enter the Shock Clock.

POWERED UP: Ignore the watch's vibrate function and it'll give you and an angry beep. If you still refuse to get up, you'll receive a bit of a shock. Literally. This watch will zap you awake.

PLAYED OUT: Will probably train you to hate sleeping.



02 Moon Lunar Globe

Price: \$600 • Distributor: Moon Project
moonproject.space

If you're in need of unique lighting, you could do worse than this impressive combination of art and science.

POWERED UP: A 1/20 million scale replica of the moon, accurately modelled in 3D, with a ring of LED lights that rotates around the globe, thus recreating the lunar phases that we see when we look up in the sky at night.

PLAYED OUT: Finding somewhere to put it so it can do its rotating light thing might be a bit of a challenge.



03 MI Guitar

Price: \$400 • Distributor: Magic Instruments
tinyurl.com/j65jnnu

Ever wanted to play guitar, but couldn't be bothered learning? The MI Guitar is for you.

POWERED UP: Press some buttons, strum away and chords magically fly out of the inbuilt speaker, ready for you to sing along, or compose.

PLAYED OUT: Runs on batteries, sounds like a synth guitar, and won't actually

teach you how to play guitar any more than Rock Band or Guitar Hero would. Seriously, just buy a copy of Rocksmith with the included cable and a starter electric guitar – it'll be more fun and you'll get a skill out of it. Guitar chords aren't that hard.

04 Edyn Smart Gardening System

Price: \$150 • Distributor: Home Depot
www.homedepot.com

We don't all have Poison Ivy's way with plants, so if it seems that greenery withers at your touch, you may need a little helping hand in your garden.

POWERED UP: Plant the Edyn in the area you'd like to monitor and it will keep track of the soil nutrition, moisture, humidity, light, and temperature; and with the

companion app, you'll get info on what to plant, when to plant it, and when to pick or harvest!

PLAYED OUT: If greenery does actually wither at your touch, you might be a death knight, or some kind of wraith.

05 Naked 3D Fitness Tracker

Price: \$1400 • Distributor: Naked
naked.fit

A full length mirror combines with a turntable/scale to create a 3D model of your body, visualised in a mobile app.

POWERED UP: It tracks metrics such as your body fat percentage, weight, and muscle gain, providing a visualisation for all the effort you're putting in at the gym you just started going to because you're not as young as you used to be and your metabolism is slowing down and are you getting a little bit of a belly there *poke*... uhhh what were we saying?

PLAYED OUT: Be cautious, and image search at your own peril. Unless of course you want to face some peril.

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INVENTORY

THE BEST BUILD
FOR EVERY BUDGET

We've decided to overhaul our Menagerie section this month, removing our Premium build which was becoming a mini-Beast. AMD still powers our entry-level system, in both the CPU and GPU, while Intel and Nvidia take out the mid and upper end, where 4K finally makes it debut in the Beast. We've also added our recommendations for best router, laptops, VR and streaming solutions. Oh yeah, if you've just won the Lotto, our new \$26,000 projector will blow your mind... and wallet.

We'd love to hear your feedback on how we can improve these builds – head to our thread on the forums at www.pcpowerplay.com.au to let us know what you'd do differently.

We've also changed the name to Inventory.

LAPTOPS

Gaming on the go

BUDGET

Gigabyte P55W v5
\$2099 www.gigabyte.com.au
If you want real gaming performance in a laptop, \$2k is where it starts



PREMIUM

Origin EON17-SLX
\$5699 www.originpc.com.au
Twin 980s and a 4GHz CPU, all running quietly. Hella yes.



BUDGET

The perfect entry-level gaming PC

CPU
AMD FX-6300 6 Core Black Edition Processor
\$155 www.amd.com
AMD still has the punch to compete in the budget range.



MOBO
Asrock 970-PRO3 R2.0 Motherboard
\$109 www.asrock.com.au
A cheap home for AMD's cheap gaming CPU.



RAM
G.Skill-NT 8GB Single DDR3 1600
\$45 www.gskill.com
8GB is plenty for our entry-level rig.



VIDEO
PowerColor R9 380 PCS+ 4GB
\$330 www.sapphiretech.com
AMD's new 960 killer



POWER
Cooler Master Thunder 500W
\$65 www.coolermaster.com
The budget beast doesn't need a lot of juice



SOUND
Plantronics RiG 500
\$95 www.plantronics.com/au
A little pricier than our previous headset but far superior.



STORAGE
1TB 7200RPM HDD (any) \$63
The cheapest 1Tb drive should house a good 50 games.



DISPLAY
AOC e2450Swh LED Monitor
\$179 www.aocmonitor.com/anz
24" and 2ms response for under \$200?



CASE
NZXT S340
\$97 www.NZXT.com
Beauty on a real budget



KEYBOARD
Tt eSPORTS Challenger
\$55 www.thermaltake.com.au
Built for PC gamers. Macros, shortcuts, the lot.



MOUSE
Rapoo V20 Optical Gaming Mouse
\$35 www.rapoo.com
The disco mouse is a pleasure to use and looks great.



TOTAL: \$1,078

PERFORMANCE

Most bells and whistles, without breaking the bank

CPU
Intel 5th Generation Core i5-6600K + Noctua NH-D15
\$365 + \$115 www.intel.com



MOBO
Asus Z170 Pro Gaming
\$259 www.asus.com.au
Our fave affordable Z170 board



RAM
HyperX HX421C14FB2K2 16GB DDR4 2133MHz
\$101 www.hyperxgaming.com
16GB at a great price



VIDEO
Galax GeForce GTX970 EXOC Sniper Edition
\$499 www.galax.net
Performance well worth the price.



POWER
Corsair VS650
\$85 www.corsair.com
This affordable PSU delivers a clean and reliable source of energy.



SOUND
Edifier Luna Eclipse speakers + Kingston HyperX Cloud Revolver headset
\$265 + \$149 www.edifier.com/au/ www.kingston.com



STORAGE
OCZ Trion 480GB + 2TB HDD (any)
\$195 + \$95 www.ocz.com
A speedy gaming drive + heaps of storage.



DISPLAY
AOC G2460PG
\$565 www.aocmonitor.com/v2015/au
24" of 144Hz, G-Sync glory.



CASE
Fractal Design Define R5
\$169 www.fractal-design.com
Our new favourite mid-tower.



KEYBOARD
Steelseries Apex
M500 \$150 steelseries.com
One of the best mechanical keyboards we've ever used.



MOUSE
Roccat Kiro
\$89.95 www.roccat.org
Extreme comfort and accuracy.



TOTAL: \$3,101.95

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RT-AC5300
Wireless-AC5300
Tri-Band Gigabit Router



THE BEAST

When overkill is barely enough...



CPU

Intel 6th Generation Core i7 6700K + XSPC RayStorm D5 RX240 V3 Water Cooling Kit
\$525 + \$587 www.intel.com www.pccasegear.com.au
 You want power, here's real power.



MOBO

MSI Z170A XPower Gaming Titanium Edition
\$499 www.msi.com
 Sexy, silver and super fast.



RAM

Corsair Vengeance LPX 3600MHz 2 x 8GB with cooler
\$399 www.corsair.com
 That high speed will show real gains in large open-world games.



VIDEO

2x MSI GTX 980TI GAMING 6G
\$2198 www.msi.com
 If you want 4K performance without any stuttering, 980 Tis are the way to go.



POWER

Silverstone 1500wST1500 Strider
\$314 www.silverstone.com
 1500W should be plenty for the three GPUs running alongside an overclocked CPU, as well as the storage within.



SOUND

Creative Soundblaster ZxR
\$389 www.creative.com
Paradigm Cinema 110 + Marantz SR5009 amp
\$3299 www.eastwoodhifi.com.au



STORAGE

2 Intel 750 1.2TB SSD + 2x 4TB HDDs (any)
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DISPLAY

Asus ROG Swift PG27AQ
\$1349 www.asus.com.au
 This 4K panel comes with G-Sync and some of the fastest pixels in the biz.



CASE

Cooler Master Cosmos II Ultra Tower **\$415** www.coolermaster.com
 It's big, it's beautiful, and it's also nice and quiet. The compartmentalised interior ensures everything runs ice-cool.



KEYBOARD

Steelseries Apex M800
\$249 steelseries.com
 One of the greatest gaming keyboards around with all the functionality you could want.



MOUSE

Mionix Castor
\$99 mionix.net
 No extraneous bells and whistles, just incredible accuracy and comfort.



HEADPHONES

Audio Technica ATH-ADG1
\$249 www.audio-technica.com
 Plug these into the Marantz amp for maximum sound quality.



TOTAL: \$14,056

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JOYSTICK

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Our beloved Logitech controller is now impossible to find, but Saitek is still innovating..



COCKPIT

Obutto oZone with Butticker gamer 2 and TrackIR 5 Pro
\$1100

You're going to need somewhere to mount your wheel and joystick, and the Obutto frame is a favourite of ours.



PROJECTOR

Sony VPLVW1000ES
\$25,999
www.sony.com.au

Sure, it's \$26k and you'll need a big room to make the most of its huge image. But it's worth it when you see games running in 4K on a 3-metre-wide screen.



VR

HTC Vive
\$1350 www.htcvive.com
 Until Oculus releases its Touch controllers, the Vive is the only all-encompassing VR experience.



ROUTER

NETGEAR R8000 Nighthawk X6 Tri-Band WiFi Router
\$300 www.netgear.com.au
 We'll upgrade to the AC5300 routers when their MU-MIMO technology matures, until then this will do a dandy job.



STREAMING

Steambox and Controller
\$75 + \$75
store.steampowered.com
 Why build a second PC for the lounge room when this \$150 pack will do the job just as well?



TOTAL: \$30,618

Tri-band data rate of of 5334 Mbps
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How Things Work

NUC CRACKER, SWEET!

ASHLEY MCKINNON knows good things come in small packages



As we move towards a world where everything is getting smaller, the desktop PC hasn't quite kept pace. Desktop and tower PC's are pretty much the same size as they have been for the last couple of years. A new trend is starting to emerge however and is threatening to clear that valuable real estate on your desk. Mini PC's, while not a new concept, are becoming increasingly popular as they get more powerful and therefore more useful. Let's take a closer look at this trending category and see what's fanning the fires.

Mini PC's basically come in two different flavours. You have the small boxy mini PC's, which are like scaled down versions of their big brother machines. There are also Stick PC's (basically, as the name would suggest, a PC on a stick). The main push for these types of computers was to introduce very low power alternatives to the existing larger PC's. Since they used less power, they produced less heat and many Mini PC's run completely silent as there is no need for cooling. Portability also factored in – with the ability to simply unplug your computer and plug in somewhere else easily.

Mini PC's are certainly the most popular in this category. These small PC's are typically a small square box with enough room for a single SSD hard drive (some can also fit an mSata drive as well), some ram and a processor. Examples of these types of Mini PC's include the Intel NUC series, the Gigabyte BRiX series and the MSI Cubi series. Nearly all vendors have begun jumping into this arena so a quick search of most vendor sites will come up with a Mini PC option.

On the inside these Mini PC's house a notebook style motherboard and can have a variety of processor options ranging from Intel Atom up to Intel i7. Depending on how much you're willing to spend some can be quite high end and are truly to be considered as a desktop replacement. Nearly all will utilise on board Intel graphics but some of the Gigabyte BRiX series have nVidia and ATI based graphics so could be an option if you're looking to build a gaming computer or Steam machine. Many of these Mini PC's have also just gone through a hardware update with the release of the Skylake processor line so they are even more powerful but still remain power friendly.

Price too is an advantage for these systems. This needs to be scrutinized though as most of these Mini PC's are offered as barebones packages. This means you will need to add your own hard drive and ram – and also an operating system to run on it.

Intel kind of paved the way for Stick PC's with their original Compute Stick released in April 2015. This was an Intel based computer, running either windows 8.1 or Ubuntu Linux that plugged into the HDMI port of either a monitor or TV. Powered by an Intel Atom Z3735F processor with 2GB ram and 32GB of EMMC storage (or 1GB of ram and 8GB EMMC for the Ubuntu Linux version) they came with a single USB 2.0 port and SD Card slot for storage expansion. Built in Wifi and Bluetooth rounded out the feature set. The whole device is quite small – about double the size of a standard USB stick.

Initially many claimed it was the next step forward in computing but after spending time using them it soon became apparent they just wasn't fast enough for most people and proved to be a major let down.

Skip forward just over year later and the Intel Compute Stick is now in its second generation. Today's' Intel Compute Stick runs the Intel Core M (M3 and M5) processor, with ram bumped up to 4GB with Windows 10 preinstalled. Users and reviewers alike are liking the new Intel Compute Stick a lot more than its predecessor due mainly to its speed increase – but also the fact it has a USB 3.0 port (and much more reliable Wifi).

Competitors to the Intel Compute Stick include the Asus Chromebit, which come packaged with the ChromeOS and web browser. It sports a quad core Rockchip processor and 2GB of ram. While outwardly it may not have the draw of a Windows or Linux based machine, the Chromebit can run any application from the Chrome Store and is finding ground as a way of turning any TV with a HDMI port into a Smart TV.

Others are on their way. Doing a search on Kickstarter or IndieGoGo will show you that many new, more powerful stick computers are coming so it's an accelerating field.

A quick look on eBay or Amazon will also point you towards other Stick PC products – though these tend to be



Android based devices.

While there's nothing wrong with that, and that they do run most applications available on the Google Play Store they do tend to have a limited function. Most are used primarily as media streamers and players, or for playing your mobile phone games on your TV.

Another option here that may have escaped your attention is the humble Raspberry Pi. This very low cost computer is in fact a mini PC, as you can load a Linux based operating system on it, plug it into a TV or Monitor and use

The Compute Stick is a mini PC that turns your TV into a monitor

■ Intel kind of paved the way for Stick PC's with their original Compute Stick ■

it for a variety of tasks. This includes setting up as a media streamer, retro games machine and low cost desktop.

If you are interested in one of the Mini PC's you first need to workout exactly what it is you are going to use it for. As there is quite a variety of options, and difference in performance and capabilities, knowing what you want to do will be key to making the right choice.

Remember too that most of the Mini PC's are supplied as barebones, so be sure to factor in the cost of extras such as hard drives and RAM when heading off to your local computer supplier. **PC**

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Statement of Intent

Veteran PC games writer **ANTHONY FORDHAM** has doled out his share of 2/10s in 15 years in the business (Mission Humanity, how we miss thee and thy unrelenting brownness). Which means it might be time to explore the stories behind some of those “failures” and ask... were they actually failures at all? Or were they actually pioneers, pioneers who sacrificed their early vision so PC gaming could go on to greater things?

At some point in the early 2000s, PC gaming (and indeed gaming in general) became a mainstream entertainment medium. And that meant the big publishers - after first viciously assimilating all the small publishers - started spending big bucks on promoting their upcoming games.

Thus was born the hype train. Before then, hype was only really done for movies and maybe the odd album. But publishers started sending us amazing screenshots of upcoming games, and then forced indentured developers to give us long but excitable interviews about how completely awesome and paradigm-shattering their game was undoubtedly going to be.

This backfired almost immediately. Games ran over schedule and over budget and features had to, inevitably, be trimmed. Or amputated. A game that its developer had promised would allow the player to do “anything physically possible” in its world, would turn out to just have a few trees and rocks with limited physics modelling. Amazing NPC AI would, on release, mean a dude in blurry cyber-armour endlessly running in a corner of a map while his outlandishly huge gun clipped impossibly through a likewise blurry wall texture.

Soon, developers learned to shut the hell up. Well, the good developers anyway. Gaming became one of the tightest-lipped forms of commercial entertainment. A publisher would send us a press release saying: “Unreal 2 will have UNPRECEDENTED detail and amazing gameplay! Please contact us for more information.” And we did contact them like good little journalists, they’d just say: “We are not providing any additional information at this time.” Cue Jackie Chan meme.

(These days I’m the editor of Australian Popular Science, and seriously, I find it easier to get a tour of the Lucas Heights nuclear reactor than get an extra screenshot of some obscure game from EA.)

What this control of information created was, for certain games, an enormous

disconnect between what a lead developer would say to us and how the game actually turned out two years later.

This column will attempt to explore some of these games. The games that had real personalities at the helm, people like Peter Molyneux and Chris Roberts, Cliffy B and Richard Gariott. And so many more. Some of these men (and they are almost exclusively men, though we should hear from Roberta Williams at least once) went on to do amazing things. Richard Gariott flew in space. Demis Hassabis - lead designer on Republic: The Revolution - went on to build AlphaGo, the AI that beat a world champion at the “computers will

■ Amazing NPC AI would, on release, mean a dude in blurry cyber-armour endlessly running in a corner of a map ■

never master this game” Go. Others faded into obscurity and it will be up to me to track them down.

What these developers - visionaries even - have in common is a bold and admirable ambition to create amazing games that pushed the envelope... matched with an apparent inability to actually get the games they saw in their minds onto our actual hard drives.

And while exploring the obvious failures of these titles, I will - thanks to a liberal supply of GOG and Steam codes and PC’s enduring ability to still run anything and everything from our communal 30+ year

back-catalogue - also play them again and ask an important question:

Yes, these games did not realise their creator’s true vision, the vision they breathlessly communicated to us in those early previews. But do these games necessarily fail, on their own merits? Could some of them actually be secretly kind of awesome?

I’ll judge these games once more, compare my 2016 experience with our judgement at the time, and even track down the developers when I can. PC gaming has a rich history, and it’s high time we prised apart some of the pages that got stuck together.

Next issue, I’ll try to start off with Republic: The Revolution. Demis Hassabis was a chess prodigy who, as mentioned, eventually built a world-famous Go-playing AI. But before his AI lab was bought by Google for billions, he designed games. He worked on Syndicate and other Bullfrog titles. His most successful game is Evil Genius, which is like Dungeon Keeper except you’re a Bond villain.

But before that was Republic: The Revolution. It’s a massively ambitious “city simulator” where the player has to manipulate the populace of the fictional country of Novistrana to put their preferred government in power. Made today, on today’s tech, it could have realised Hassabis’ dream. But back in 2003... well, we’ll find out next issue. See you then! **PC**

HAGIONAUT: [n.] A traveller in history, one who treats events and people considered trivial by mainstream society with perhaps excessive reverence. From HAGIO- (relating to saints and holiness) and -NAUT (Greek for sailor; meaning voyager or traveller).



SAUCE? True internet citizens may recognise the core concept of this column from AV Club writer Nathan Rabin’s “My World of Flops” where he analyses movies that are considered to be, well, flops. What I’ll be doing is a little bit different, but hey, as Steve Jobs said Picasso said: “Good artists copy, great artists steal” even though there’s no evidence Picasso DID ever say that, and if he did he was probably misquoting T S Eliot who DID say in The Sacred Wood: Essays on Poetry and Criticism: “Immature poets imitate; mature poets steal.” Yeah. So never say PCPP ain’t literary coz we is.



INTENDED TARGETS

While the list is almost guaranteed to change, here are some of the titles I'm hoping to address in upcoming instalments:

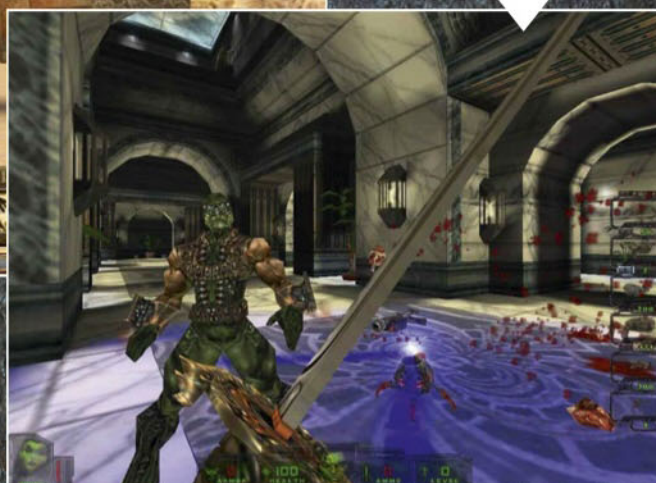


ULTIMA IX (1999, Origin):

A sprawling 3D RPG in a massive world, forced out early by an unkind publisher three years before Morrowind. Who the hell exactly is to blame here?

DAIKATANA (2000, Ion Storm):

How could the studio that brought us Deus Ex also give us this lacklustre cyber-ish FPS? Two words: John Romero. Yet Daimatana has ideas that would not be out of place in a modern shooter...



BLACK & WHITE (2001, Lionhead):

Peter Molyneux promised us a world where we, as gods, could do ANYTHING. So was the resulting mess just a good idea done 15 years too early?

DUKE NUKEM FOREVER

(2011, Gearbox): Duke was a running gag for over a decade, until 3D Realms dropped a box full of half-coloured-in concept art on Gearbox's doorstep, rang the doorbell, and then ran off giggling.

FREELANCER (2003): Today, Chris Roberts is crowdfunding Star Citizen at a rate of about \$4 million a MONTH. Back in 2003 he tried to do it for a sliver of that, while various publishers fought over his IP.



ALIENS: COLONIAL MARINES (2013, Gearbox): Seriously, how do you mess up the Aliens franchise this badly? Does this game have any redeeming features? Did its failure open the way to Alien Isolation?





Infinitely Audible

LEWIS VAUGHAN is music to our ears

No Man's Sky is right around the corner. It feels like it has been an eternity since we first saw the gameplay preview video. Everywhere you look, the game is getting well deserved attention and why shouldn't it? It's an incredibly bold idea. It's big, it might even be the biggest game universe ever made, which is even more impressive when you consider the fact that the studio developing the game, Hello Games, has only 15 employees. This issue's cover article is all about the game's procedurally generated universe and how incredibly near-infinite it is, but you already knew that. What you might not know is that the music for the game is just as interesting, just as daring, and just as close to being infinite. With that in mind, it may be good to take a little look at music and video games.

Music is a huge part of video games. Think about a game like Silent Hill and what it would be without music. Every noise you hear translates to potential death, and you don't like dying, so you don't like hearing noises. You can easily notice a creaking door opening behind you, but what you may not be fully aware of is the music. The tension of the strings when you go around a corner or the sudden stab of a deep piano key when something randomly jumps in front of you. In reality, you're just walking down a hallway. Well actually, in real-reality you're sitting in a room, sweating on a controller and trying to maintain control over your bladder. That's the power of music in a nutshell, but it's also a great example of how important the role that music plays in video games and whether or not a game really sells the world that you're playing in, or in No Man's Sky's case, the universe that you're playing in. We mentioned before that the game is going to be big, but that term doesn't explain the extravagance quite right. Near-infinite is probably a better term.

Much like the game world, the music is generated procedurally, reacting to everything from gameplay to changes in terrain or whether or not you're in danger. That's not an easy thing to accomplish, it's obvious how much effort is going into this project musically. Few games really try to push the boundaries when it comes to games these days, which is a shame. It seems like "good enough" is a phrase that describes music in the majority of games lately. Now, that's not to say that a lot of



Star Wars: X-Wing

in the early 90's, Michael Land and Peter McConnell developed the iMuse system

game music is bad, not by a long shot, but it's often nothing different, nothing exciting. When thinking about video game music that breaks the mould, games like de Blob come to mind. The game sees you rolling around a city, painting as you go. As you paint the city, the soundtrack changes depending on what colours you use. An example of this is when you paint the city in red, more saxophone solos get added to the soundtrack. Interactive musical gameplay mechanics like that are great, because they add another layer of immersion to the game. As you slap different colours around, the world changes, so it makes sense that the music should reflect these changes too.

While de Blob was a lot of fun, it wasn't the first game to try something like this. In fact, way back in the early 90's, Michael Land and Peter McConnell developed the iMuse system while working at LucasArts. The system was developed out of Land's frustration with the audio system while composing the soundtrack for The Secret of Monkey Island. The idea behind the iMuse system was to synchronize audio with on-screen events and so that the audio transitions seamlessly from one musical theme to another depending on what was happening in the game. This system would go on to be used in a number of classic Star Wars games including the first ever DOS computer game set in the Star Wars

universe, Star Wars: X-Wing. With the advent of these interactive music engines, some video games have transitioned to new levels of immersion and now with the rise of VR imminent, good music and sound will be more crucial than ever in those games where the whole point is immersion. More so, in those games music and sound will be under more scrutiny than ever. With companies spending millions of dollars investing in VR hardware, if developers don't realize the importance of sound, then that's a huge chunk of the experience thrown away. It's certain that a lot of VR games will get it wrong, especially while easing into this new age of gaming hardware, but it's just as certain a lot of games will get it right. That said, not all games require interactive sound, but it's still a great feature for some games to play around with and add to the experience, especially when done right.

With games like The Secret of Monkey Island and X-Wing already showcasing amazing interactive sound, as well as games like No Man's Sky right around the corner, it's clear that music and games with most likely go hand in hand for the rest of time. There are also many examples of games that don't use interactive music that still achieve a great experience. But most importantly, for us, whatever the future holds, whether it's interactive music or linear music, it's just an exciting time to have ears. **PC**

Kicking the Habit

DANIEL WILKS has got your back

I have a sickness. I can't for the life of me stop backing projects on Kickstarter. I'm not joking – it's getting to the state that it's near pathological. This month (April) alone I've backed five new projects (one of which has since been cancelled) and in March I backed seven. It's not getting out of control. I can quit anytime I want to. Honest.

Although I am a consummate collector at heart, the reason why I back so many projects is not simple acquisition or collecting in the same manner it is with movies for me. The reason why I back so many game and film projects is because I want everyone to have a chance to tell their stories. Take for example one of the projects that I backed and we reviewed this month, *Aurion: Legacy of the Kori-Odan*. The reason I backed the game wasn't because it was an action RPG, a genre I dearly love, but rather because it is the first project from the first Cameroonian development team. As somebody obsessed with stories, how could I resist putting my money where my mouth is to find out the type of stories that an as yet untapped territory could deliver? It turns out that the final product was a little over ambitious and patchy, but I was still glad to have had the chance to help them make it.

Although there was an element of foreign exoticism in my choice to back *Aurion*, that is far from the case with the vast majority of games that I've backed. My choices really come down to the idea and passion of the dev team. Some choices have been obvious – why wouldn't a lover of stories and RPGs want to throw money at Obsidian and BioWare to creator passion projects, any why wouldn't anyone with a fondness of old school tabletop wargames want to send money to Harebrained Schemes, a team who have shown a great track record of making excellent Kickstarted games, to make a modern version of *Mechwarrior*? Other games though, like *Masquerada: Songs and Shadows*, *InSomnia*, *Hover: Revolt of Gamers* and *Wildfire* (the fact that I am friends with the dev wasn't as much of an influence as you would think), are appealing more for the passion of their creators; seeing that passion I can't help but want to back them.

I think a lot of my desire to back projects comes from my desire for inclusivity. I know it's a dirty word in some circles and will get me labelled as an SJW or something, but what I mean by inclusivity in this case, is giving anyone with a good idea a chance

to do something with it. In a perfect world (for me at least) everyone would have the ability and facility to share their stories and creations. We live in a world where this is more possible than ever before with the ubiquity of the Internet and the number of free engines available. I see crowdfunding as just another avenue towards this end.

Of course, backing so many projects isn't what you would exactly call a wise investment. I've been lucky in that I've only been burnt once by a project that has achieved its funding goal then shut down development and cut off contact. I still have 30 odd projects in my successfully funded list that are yet to appear, some of them four years after the project was funded. It's a risk, but one I'm happy to make for the most part, as I'd rather be out a few bucks than miss the opportunity to get in on the lowest of ground floors for someone's dream.

Strangely enough, for someone who collects films with an unholy passion, I am hugely reticent to back film projects. I've backed a few – Veronica

Mars, *Kung Fury* and *Samurai Cop 2* (and boy do I wish I could take that back) – but for the most part I've steered clear for many of the same reasons that I back games. Whereas the passion of game developers seems to allow them to expand their audience, many of the film projects seem to

have such a specific passion or vision that there is no entry point. Documentaries about niche localised events abound, as do arty black and white or sepia toned short gothic ghost stories. The trials of dating seem to be omnipresent as are short films about the evils of GMOs. There are some gems to be found (and inevitably backed by yours truly), but for the most part the sameness and narrowness of vision combined with the all too meagre asking budgets that aren't anywhere near large enough to fund production leave me cold.

Luckily I've managed to confine my pathology to Kickstarter. If I looked at IndieGoGo, Go Fund Me or any of the others I probably wouldn't be able to pay my rent. As much as I want everyone to be able to make good on their creative ideas, living on the streets might be too high a price to pay. **PC**

■ I've been lucky in that I've only been burnt once by a project that has achieved its funding goal then shut down development ■





NEXT MONTH



AUSTRALIA'S #1 PC GAMING MAG
PC PowerPlay

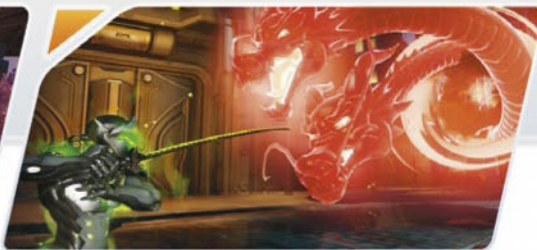
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JUNE 16

OVERWATCH™

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#TheWaitIsOverwatch



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A promotional poster for the game Master of Orion. The background is a deep space scene with a large, glowing blue planet in the center. Several futuristic spacecraft are visible, some with blue and white designs, others with red and black. In the foreground, three characters are prominently displayed. On the left is a human man with short grey hair, wearing a dark blue, high-collared uniform. In the center is a cat-like alien with orange fur, yellow eyes, and a silver, ornate helmet with a crest. She wears a red, low-cut dress with silver jewelry. On the right is a more monstrous alien with a large, white, mask-like face, orange fur, and a blue and yellow striped tunic. The title 'MASTER OF ORION' is written in a large, metallic, stylized font across the middle. Below it, the words 'CONQUER THE STARS' are written in a smaller, spaced-out font.

MASTER OF ORION

CONQUER THE STARS

Master of Orion revives the iconic 4X strategy gameplay (eXplore, eXpand, eXploit, and eXterminate) pioneered by the original Master of Orion franchise. Lead one of 10 playable races across vast galaxies, crushing worlds, manipulating leaders, and amassing resources in your bid to become the Master of Orion.

CONQUER THE STARS TODAY!

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